WOMEN IN COMBAT: THE MEDICAL AND BEHAVIORAL HEALTH EFFECTS ON WOMEN WHO HAVE SERVED IN COMBAT

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE
General Studies

by

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2014-01

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED** *(From - To)*
13-06-2014	Master's Thesis	AUG 2013 – JUN 2014

4. TITLE AND SUBTITLE

Women in Combat: The Medical and Behavioral Health Effects on Women Who Have Served in Combat

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

MAJ Carina L. Kelley

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Army Command and General Staff College
ATTN: ATZL-SWD-GD
Fort Leavenworth, KS 66027-2301

8. PERFORMING ORG REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for Public Release; Distribution is Unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

As with any military conflict, the Department of Defense studies the health effects on Soldiers who have deployed in support of combat operations. With the role of women serving in combat increasing over the past decade, it is important to understand how women's health may be affected by combat deployment. The purpose of this study was to identify what are the medical and behavioral health effects on women who have deployed, how these health effects may differ from their male counterparts, and how well the Department of Defense is identifying and addressing these different health issues. This thesis is based on a review and analysis of research that has already been conducted. Although very little research is available which focuses specifically on women's health effects, it can be concluded that women may deal with combat-related health effects differently than men, and that more research must be conducted in order to better understand the health effects on women, and how to provide better care for women once they return from combat deployment. Additionally, it can be concluded that a new post-deployment health assessment form should be considered in order to better identify post-deployment health care needs for women returning from combat.

15. SUBJECT TERMS
Women in Combat, PTSD, MST, mTBI, medical health effects, behavioral health effects, suicide, depression, reproductive health issues, respiratory illness, substance abuse, PDHA, OIF, OEF, OND

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			**19b. PHONE NUMBER** *(include area code)*
(U)	(U)	(U)	(U)	100	

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18

MASTER OF MILITARY ART AND SCIENCE

THESIS APPROVAL PAGE

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

WOMEN IN COMBAT: THE MEDICAL AND BEHAVIORAL HEALTH EFFECTS OF WOMEN WHO HAVE SERVED IN COMBAT, by MAJ Carina L. Kelley, 100 pages.

As with any military conflict, the Department of Defense studies the health effects on Soldiers who have deployed in support of combat operations. With the role of women serving in combat increasing over the past decade, it is important to understand how women's health may be affected by combat deployment. The purpose of this study was to identify what are the medical and behavioral health effects on women who have deployed, how these health effects may differ from their male counterparts, and how well the Department of Defense is identifying and addressing these different health issues. This thesis is based on a review and analysis of research that has already been conducted. Although very little research is available which focuses specifically on women's health effects, it can be concluded that women may deal with combat-related health effects differently than men, and that more research must be conducted in order to better understand the health effects on women, and how to provide better care for women once they return from combat deployment. Additionally, it can be concluded that a new post-deployment health assessment form should be considered in order to better identify post-deployment health care needs for women returning from combat.

ACKNOWLEDGMENTS

This paper would not have been possible without the support and guidance from several people. First, I would like to thank my CGSC Small Group Advisor and committee chair, Mr. Bert Brown, for his mentorship and support throughout the entire year. I would also like to thank my other committee members, Dr. Nellie Goepferich (CGSC, Department of Distance Eduction) and Mrs. Sara Lechtenberg-Kasten (TRADOC Analysis, Women in Combat Study Group), for their additional expertise and assistance. And most importantly, I want to thank my husband and daughter who supported me throughout this entire journey, and who have always provided me with the love and support I needed to accomplish all of my goals.

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ACRONYMS

DA	Department of the Army
DACOWITS	Defense Advisory Committee on Women in the Services
DoD	Department of Defense
EDO	Eating Disorder
MOS	Military Occupational Specialty
MST	Military Sexual Trauma
mTBI	Mild Traumatic Brain Injury
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
PDHA	Post-Deployment Health Assessment
PDHRA	Post-Deployment Health Reassessment
PTSD	Post-Traumatic Stress Disorder
SGA	Small Group Advisor
TBI	Traumatic Brain Injury
TRADOC	U.S. Army Training and Doctrine Command
US	United States
VA	Department of Veterans Affairs
WIC	Women in Combat

ILLUSTRATIONS

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CHAPTER 1

INTRODUCTION

> This does not mean women should not be serving or that they aren't capable of doing certain jobs," Polusny said. "This isn't about what someone can or can't do. This is about identifying the best way to bolster soldiers' resilience prior to deployment and care for them after the deployment ends.
>
> — John Crawford, *Army Magazine*

Overview

Recent military conflicts such as Operation Iraqi Freedom and Operation Enduing Freedom have led to a significant increase in the number of women deploying and serving in combat (Gutierrez et al. 2013). With more women serving closer to the front lines, women are exposed to more combat-related dangers than ever before (Vogt et al. 2014). Between March 2001 and October 2011, more than 845 women have been wounded in action and more than 142 women have been killed in action between Operation Iraqi Freedom and Operation Enduring Freedom, combined (Gutierrez et al. 2013). With an increased role in combat operations, women are also experiencing significant combat-related medical and behavioral health effects upon redeployment from a combat deployment (Gutierrez et al. 2013). Recent research shows that women may experience different medical and behavioral health effects in comparison to men (Vogt et al. 2014). This information raises the question on how women may cope differently with the medical and behavioral health effects experienced following combat deployment (Mattocks et al. 2012). Additionally, the question of whether or not the health effects of combat on women are being adequately identified and addressed by the Army and the Department of Defense is also raised with an increase of women's role in combat. On

January 24, 2013, Secretary of Defense Leon Panetta officially rescinded the 1994 Direct Ground Combat Definition and Assignment Rule which excluded women from assignment to units and positions whose primary mission was to engage in direct combat on the ground (Department of Defense 2013). With full integration of women into ground combat roles, it is more important than ever that the Army embraces the issue of combat-related medical and behavioral health effects on female Soldiers.

The main purpose of this thesis is to identify the different medical and behavioral health effects that female Soldiers experience following combat deployment and how these health effects may differ than male Soldiers. Additionally, this thesis will also determine how well the Army and the Department of Defense are identifying and addressing these different medical and behavioral health effects. After more than a decade of Soldiers deploying in support of Operation Iraqi Freedom, Operation Enduring Freedom, and Operation New Dawn, there have been numerous studies on how Soldiers can be affected by combat, what those effects are, and how the Army and Department of Defense is addressing these different issues. Unfortunately, very little of the research available addresses the specific differences of medical and behavioral effects between men and women (Gutierrez et al. 2013). This research could possibly help in changing how the Army identifies and addresses the health effects specific to women who have served in combat, and could also potentially assist in the current studies regarding the integration of women into combat military occupational specialties.

Primary Research Question

What are the different medical and behavioral health effects experienced by female Soldiers following combat deployment, how do these health effects differ from

their male counterparts, and how is the Army and the Department of Defense addressing these differences in health effects between males and females who have served in combat?

Secondary Research Questions

1. What are the different physical health effects that female Soldiers are experiencing following combat deployment?

a. What kinds of physiological problems do female Soldiers experience?

b. Is a female Soldier's reproductive system affected by combat deployments and if so, how?

c. Are female Soldiers experiencing traumatic brain injuries during combat?

2. How is a female Soldier's behavioral health effected by combat experience?

a. How do female Soldiers who have deployed to combat cope with military sexual trauma, and/or the fear of military sexual trauma during and after deployment?

b. How does PTSD affect women who have served in combat?

c. How do female Soldiers cope with depression and suicide following combat deployment?

d. Is alcohol abuse or substance abuse prevalent in female veterans?

e. What are the social impacts on female Soldiers during and after combat deployment? Do women experience isolationism? Do female Soldiers experience social adjustment disorder after returning from combat deployment?

3. How does the Army and the Department of Defense identify and address the different medical and behavioral health effects experienced by female Soldiers after returning from combat deployment?

a. Do the Army's PDHA and PDHRA programs accurately and effectively identify and address the different medical and behavioral health effects of female Soldiers after deploying to combat?

b. Does the PDHA DD Form 2726 and PDHRA DD Form 2900 efficiently identify health effects experienced following a combat deployment?

c. Do the PDHA and PDHRA programs adequately report the issues to the appropriate agencies in order to provide assistance to female Soldiers as quickly as possible?

d. How do the PDHA and PDHRA assessment forms adequately identify female-specific health-related issues? If they do not, then why?

e. How are the PDHA and PDHRA programs failing to adequately identify and address health effects of women who have served in combat?

4. What other programs currently exist in order to identify and address the different health effects on female Soldiers returning from combat deployment, besides the Army's PDHRA program?

Definitions

For the purpose of this research, the following definitions are provided for clarification of terminology used throughout this thesis:

Behavioral Health Effects: The term behavioral health effects refers to the mental and social aspects of health. Examples of mental health effects include, but not limited to,

suicide, alcohol and/or substance abuse, post-traumatic stress disorder (PTSD), and military sexual trauma (MST). Social health effects include, but not limited to, social anxiety disorders, family separation issues, employment difficulties, and communication issues.

Combat Deployment: In this thesis, combat deployment refers to a Soldier's deployment to a combat zone in support of Operation Iraqi Freedom, Operation Enduring Freedom, and Operation New Dawn. It does not refer to any specific military occupational specialty, location of deployment, length of deployment, or level of combat experienced during the deployment.

Comorbidity: Comorbidity is defined as the existence of one or more additional disorders or diseases that occurs at the same time as another primary disease or disorder (Valderas et al. 2009).

Medical Health Effects: In this thesis, the term medical health effects refers to the physical health effects experienced by women who have served in combat. Examples of physical medical health effects include, but not limited to, muscle pain and stiffness, fatigue, severe headaches, reproductive health issues, traumatic brain injuries, and musculoskeletal conditions.

Military Sexual Trauma: Military sexual trauma is defined by the Department of Veterans Affairs as any sexual assault or repeated sexual harassment that a male or female service member may experience while serving on active duty. This includes sexual activity, unwanted touching or grabbing, threatening, and sexually offensive remarks (Military Sexual Trauma 2013).

Musculoskeletal Injury: Musculoskeletal injuries are considered to be damage to a person's muscular or skeletal systems (Centers for Disease Control and Prevention 2012).

Post-Traumatic Stress Disorder (PTSD): Post-traumatic stress disorder is defined as a condition one person may experience following a stressful or difficult event involving physical harm or the possibility of harm in his or her life (SWHR 2009). Typical symptoms of PTSD, which must be displayed for more than 30 days, include intense fear, helplessness, and horror, and can be either acute, chronic, or delayed (Gaylord 2006).

Somatization: Somatization is defined as a chronic display of bodily or physical symptoms involving more than one body part, but not found to be attributed to any physical cause (Medline Plus 2014).

Spirometry: Spirometry is a test that measures of how much breath is inhaled and exhaled. This test is commonly used to diagnose respiratory illnesses such as asthma, chronic obstructive pulmonary disease (COPD), and other diseases affecting the ability to breathe (Mayo Clinic 2011).

Veteran: In this thesis, the term veteran refers to a Soldier who has served in the military (whether on active duty, National Guard, or the Reserves) and has deployed to a combat environment such as OIF, OEF, or OND. Additionally, the term veteran does not distinguish whether the Soldier continues his or her military service following deployment, or departs from military service.

Assumptions

Several assumptions were made in the development of this thesis. The first assumption made is the research conducted to examine the different medical and

behavioral health effects on women who have served in combat is accurate and truthful. The research referenced in this thesis is based off data regarding female Soldiers who are either currently or were previously on active duty, and have experienced at least one combat deployment during their military service. And finally, the medical and behavioral issues experienced by women following a combat deployment did not exist prior to their deployment.

Limitations

There are three significant limitations in this study. The first, and most significant limitation of this study, is the amount of research and data analysis available regarding female Soldiers and their personal medical and behavioral health effects following a combat deployment. There is a large amount of research regarding the medical and behavioral health effects experienced by Soldiers who have served in combat, but the research is mostly descriptive of male Soldiers due to the significantly lesser amount of female Soldiers serving on active duty (Mattocks et al. 2012). Additionally, much of the research available is not gender-specific at all, making it difficult to differentiate between male and female health effects (Street Vogt, and Dutra 2009).

The second limitation in this study is the majority of research available regarding female Soldiers is based on veteran female Soldiers following their departure from active duty service. Little research data is available that specifically delineates the medical and behavioral health effects of women who have served in combat and return to active duty, and those that are no longer on active duty, making it difficult to draw conclusions from the available research. “With a single exception, investigations of sexual trauma among OEF/OIF troops have been limited to Veterans Affairs (VA) healthcare users based on

administrative data sources, or smaller, female-only samples with limited generalizability and no ability for gender comparisons, making it difficult to draw definitive conclusions" (Street et al. 2013, S557).

The third limitation in this study is the lack of research regarding medical and behavioral health effects on women who have served in combat from operations prior to Operation Iraqi Freedom, Operation Enduring Freedom, and Operation New Dawn. Women have participated in military operations and served in combat operations since the Revolutionary War (Street Vogt, and Dutra 2009). It would be beneficial to see how the role of women in combat has increased in recent years, and whether the different medical and behavioral health effects have increased as well. Comparing the increased role of women in combat and the possible link to increased physical and behavioral health effects following combat deployment could provide valuable insight to the current studies being conducted by the Army regarding the integration of women into specific combat military occupational specialties.

The fourth and final limitation discovered while conducting research in support of this thesis was the timeframe in which the different medical and behavioral health effects which female Soldiers experience after returning from deployment are reported. Whether a female Soldier reports her medical or behavioral health effects while on active duty, immediately following a combat deployment, or reports these health effects following her departure from active duty could have significant impacts to research. Women who return from combat and remain on active duty may be more reluctant to report all of their medial issues as a concern that it could affect their military career in comparison to

women who have departed from active duty service and are receiving treatment through the organizations such as the Veterans Administration.

Delimitations

One delimitation in this thesis is that research data regarding the medical and behavioral health effects on women who have served in combat prior to Operation Iraqi Freedom, Operation Enduring Freedom, and Operation New Dawn (such as Desert Storm, Vietnam, and the Korean War) is very limited. This has made it difficult to compare whether improvements have been made over the years on how the Army and the Department of Defense identifies and addresses the health needs of women who have served in combat.

Additionally, with the deployments to Operation Iraqi Freedom, Operation Enduring Freedom, and Operation New Dawn being relatively recent, there is little to no research or analysis being conducted by the Army or Department of Defense on whether or not the current Post-Deployment Health Reassessment (PDHRA) program used by the Army, and any other programs used, are effectively identifying and addressing the medical and behavioral health effects caused by combat deployment. In particular, there is very little research available which specifically looks at how the PDHRA program delineates the different health effects experienced by male and female Soldiers, and whether or not different approaches to treatment and health care are necessary for women who have deployed to combat.

Significance of the Study

With more than a decade of war, the Army and the Department of Defense has been spending a great deal of time and money researching and analyzing how deployments affect Soldiers; however, limited research exists which addresses combat-related medical and behavioral health needs of female Soldiers returning from combat. Nor does the research adequately address how men and women are affected differently by combat deployment. With recent emphasis on overall Soldier resiliency by the Secretary of the Army as stated in Army Directive 2013-07 which details the importance of the Army's Comprehensive Soldier and Family Fitness Program (Department of the Army 2013), combined with the present focus of placing women in combat; this research will help fill the gap in the literature on the topic and will provide relevant information to the Army's current gender integration studies, and how to best incorporate women into combat arms positions.

Summary

The purpose of this study is to address what are the medical and behavioral health effects on women who have served, and how the health effects on female Soldiers may differ from their male counterparts. Additionally, this study will hopefully identify whether or not the Army and the Department of Defense are adequately identifying these different combat-related medical and behavioral health effects during post-deployment in order to provide adequate treatment to our female Soldiers after they return from a combat-deployment. In chapter 2, the literature review will focus on identifying and describing the many different health effects suffered by female Soldiers who have served in combat. The literature review will also include: a comparison of combat-related health

effects between male and female Soldiers, a comparison of how female Soldiers cope with and seek treatment for their combat-related health effects following a combat-deployment in comparison to their male counterparts, and how the Army and the Department of Defense are addressing these issues. Chapter 3 will describe the methodology in which the research was conducted for this thesis. Chapter 4 will analyze the research data currently available regarding the different medical and behavioral health effects experienced by women after returning from combat-deployment. Finally chapter 5 will provide the conclusion and any recommendations for further research regarding the medical and behavioral health effects on women who have served in combat.

CHAPTER 2

LITERATURE REVIEW

There is a wealth of research material and information currently available regarding the study of the medical and behavioral health effects on male and female Soldiers combined, who have deployed in support of recent conflicts such as Operation Iraqi Freedom, Operation Enduring Freedom, and Operation New Dawn. With more than 2.6 million Soldiers having deployed to Iraq, Afghanistan, and the Persian Gulf region since September 11, 2001 (Van Dahlen 2012)**,** there has been increased interest in the different effects and impacts of deployment on Soldiers by not only the Army, Department of Defense, and Congress, but the American public as well.

Most of the research that is currently available focuses on individual medical or behavioral health effects suffered by both men and women who have deployed, such as Post-Traumatic Stress Disorder (PTSD), or suicide, or Military Sexual Trauma (MST). Unfortunately, the majority of the research is generalized, and is either focused on male Soldiers or does not specifically discuss how the medical and behavioral health effects differ between males and females. “A substantial body of research has examined the consequences of combat zone deployment . . . but the majority of this research has focused on male veterans” (Mattocks et al. 2012, 537). Females may be included in the study population, and the research may reflect the different statistics between men and women, but there is little analysis to what these differences mean to the Army and Department of Defense.

Although limited, there is some research available which delineates the differences between medical and behavioral health effects between male and female

Soldiers. Unfortunately, research is nearly non-existent on how well the Army and the Department of Defense is addressing these different combat-related health issues experienced specifically by female Soldiers who have deployed, and whether or not changes in health care need to be made in order to best capture these health effects, and to provide appropriate health care to female Soldiers.

Chapter 2 will describe the key statistics and information currently available regarding the study of medical and behavioral health effects on women who have served in combat. This chapter will be separated into three main categories. The first and second categories will focus on identifying and describing the different medical and behavioral health effects experienced by female Soldiers who have deployed to combat. The third category will explore the PDHRA process which the Army and the Department of Defense currently use in order to identify these combat-related health effects, as well as any additional programs which may exist that are focused on examining and studying the medical and behavioral health effects on women who have served in combat.

Medical Health Effects

Musculoskeletal Injuries

Some of the most common injuries experienced by not only Soldiers who have deployed to combat, but Soldiers in general, are musculoskeletal injuries. A musculoskeletal injury is considered to be damage to a person's muscular or skeletal system, usually caused by strenuous activity (Musculoskeletal Injury 2014). Some of the musculoskeletal disorders which Soldiers can experience include: intervertebral disc disorder, other/unspecified disorders of the back and joints, and other disorders of the cervical region (MSMR 2012).

Musculoskeletal injuries can have serious impacts on a Soldier's ability to perform his or her mission, either during a combat deployment or while at home station. Unfortunately, according to recent research conducted by Dr. Sally Haskell et al. utilizing information provided by Veterans Affairs, few studies have been conducted which look at the musculoskeletal injuries experienced by Soldiers who have deployed in support of OIF and OEF (Haskell et al. 2011).

While little research has been conducted overall, some research has shown that musculoskeletal disorders and treatment can be complicated by other health effects such as high rates of depression and adjustment disorders (Haskell et al. 2011). Additionally, some research has provided important findings regarding the impact of combat deployment on musculoskeletal injuries specifically in female Soldiers. In a study conducted by Haskell et al., it was discovered that women tend to have more musculoskeletal injuries than their male counterparts within the first year of returning from a combat deployment, even though male Soldiers may have more combat exposure than female Soldiers (Haskell et al. 2011). This may be due to the fact that heavy body armor worn by Soldiers was originally designed to be worn by men, thus causing more musculoskeletal injury to female Soldiers (Haskell et al. 2011). Haskell's study also concluded that females who had deployed to combat had similar rates of back and joint problems as males, but females had more instances of musculoskeletal issues such as limb pain, myositis, myalgia, and muscle spasms than their male counterparts (Haskell et al. 2011).

Reproductive Health Effects

Research has shown that combat deployments can have a significant impact on a female Soldier's reproductive health. Some of the reproductive system disorders which female Soldiers may experience include, but are not limited to, disorders of menstruation and other abnormal bleeding, and female infertility (MSMR 2012). These gynecological issues are an additional stressor on female Soldiers' health in the military and are something which male Soldiers rarely have to experience (Gaylord 2006). Several studies have been conducted on pregnancy outcomes in female Soldiers who have deployed to combat, such as fertility disorders, miscarriages, and birth defects, but little has been studied to determine the effects of the reproductive issues on a female Soldiers' mental health following a combat deployment (Mattocks et al. 2010).

Additionally, other significant mental and behavioral health issues can be associated with reproductive health issues. For example, PTSD has been linked to causing some reproductive health issues in females returning from combat deployment, due to the fact that PTSD can lead to a decreased willingness to seek preventive reproductive health care upon redeployment (Committee on Health Care for Underserved Women 2012). Other stressors such as military sexual trauma, interpersonal violence, and intimate partner violence can also be linked to reproductive health issues (Committee on Health Care for Underserved Women 2012).

Reproductive health issues experienced by women who have deployed can be caused by the austere combat environments where female Soldiers may have limited access to adequate medical care and sanitary supplies (Committee on Health Care for Underserved Women 2012). Having limited access to sanitary supplies can lead to

females experiencing urinary tract infections or bacterial vaginosis while deployed, and with limited medical care available, could lead to long-term reproductive issues following the deployment (Committee on Health Care for Underserved Women 2012). Additionally, deployments and frequent limited access to adequate medical care can lead to female Soldiers not receiving standard preventive care, such as cervical cancer screenings, and lack of ongoing care for preexisting reproductive health issues such as menorrhagia, endometriosis, or uterine leiomyomas (Committee on Health Care for Underserved Women 2012).

Female Soldiers may also experience additional reproductive health issues due to the effects of the climate of their deployed locations (i.e. hot, dry deserts). In a survey of female veterans receiving treatment at a VA health care facility between 2002 and 2008, nearly 34 percent experienced returning from OIF and OEF with urinary tract infections, reproductive system problems, and other genitourinary issues (Fitzpatrick 2010). Only 8 percent of the male veterans being seen at the VA health care facility reported any reproductive health issues (Fitzpatrick 2010). One hypothesis is that these reproductive health issues are caused by factors such as dehydration, which is a common issue amongst Soldiers deployed in the desert environment found in Iraq and Afghanistan (Fitzpatrick 2010).

Mild Traumatic Brain Injury (mTBI)

With the recent conflicts in Iraq and Afghanistan, Mild Traumatic Brain Injury, or mTBI, has become a popular point of discussion when looking at the different injuries in Soldiers who have deployed to combat. Traumatic brain injuries are often the result of exposure to blasts, particularly those associated with individual explosive devices

(Carlson, Stromwall, and Lietz 2013). Traumatic brain injuries are not associated with male Soldiers only—female Soldiers are just as much at risk of experiencing traumatic brain injuries from IEDs as male Soldiers. In a research study conducted by Health Services Research and Development Service (Jesse 2011), it was determined that men and women suffer from nearly the same amount of combat-related traumatic brain injuries—34 percent of female Soldiers and 37 percent of male Soldiers (Jesse 2011). The difference in mTBIs experienced by male and female Soldiers lies in how each receive treatment upon return from a combat deployment. In the survey conducted by the VA Health Services Research and Development Service Evidence-based Synthesis Program, it was discovered that female Soldiers were more likely to receive outpatient care for instances of mTBI, whilst male Soldiers were more likely to receive inpatient care for mTBI following a combat deployment (Jesse 2011). The reason for this is unknown, but it could be related to how female Soldiers may feel as if seeking treatment is a sign of weakness, or that they are burdening their unit. Female Soldiers may seek outpatient treatment because it is easier to hide from their peers, reducing the stress caused by needing treatment.

According to a study published by Sammons and Batten in 2008, traumatic brain injury was described as the "signature injury" of veterans returning from OIF and OEF (Carlson, Stromwall, and Lietz 2013). This means that traumatic brain injuries can be difficult to diagnose and treat because many other health issues may be experienced at the same time, according to a study conducted by Vasterling, Vefaelli, and Sullivan in 2009 (Carlson, Stromwall, and Lietz 2013). A study conducted by Sayer et al. in 2008, it was found that mental illnesses are often found to coexist in patients who suffer from

traumatic brain injury (Carlson, Stromwall, and Lietz 2013). In a study conducted by Hoge in 2008, it was found that OIF and OEF veterans experiencing PTSD were more likely to have suffered from a mTBI than those who did not suffer from mTBI (Carlson, Stromwall, and Lietz 2013). As reported by the Society for Women's Health Research in 2008, a study of combat service members found that nearly half of service members who were studied who suffered from mTBI also suffered from PTSD. And according to a study by Carlson et al. in 2010, in a sample of Veterans Affairs patients diagnosed and being treated for traumatic brain injury, 63.3 percent had PTSD, 46.3 percent experienced depression, and 26.2 percent suffered from substance abuse disorders (Carlson, Stromwall, and Lietz 2013).

Respiratory Illnesses

Respiratory illnesses are also being experienced by Soldiers who have served in a combat deployment. Soldiers who have deployed to Iraq and Afghanistan are experiencing an increase of respiratory illnesses such as asthma, chronic sinusitis, and chronic bronchitis over Soldier who have not deployed in support of a combat operation (MSMR 2012). According to a report on respiratory illnesses for Soldiers who have deployed to Iraq or Afghanistan by Szema 2011, research has shown that Soldiers have higher rates of newly diagnosed asthma following a deployment to Iraq or Afghanistan, over a Soldier who has not deployed, but the respiratory illnesses and spirometry rates of Soldiers how have deployed have not been addresses by the military (Szema et al. 2011).

In the study conducted by Szema et al., research has shown that Soldiers who have served in a combat deployment to Iraq or Afghanistan have increased respiratory issues such as wheezing, coughing, sputum production, chest pain and tightness, and

allergies following their combat deployment, regardless of whether the Soldier had been diagnosed with asthma prior to the deployment (Szema et al. 2011). Based off these findings, Szema et al. conducted a study on Soldiers who had deployed to Iraq or Afghanistan. The research concluded that 14.5 percent of the 1,800 Soldiers with combat deployments in support of OIF or OEF required spirometry (a study of breathing), whilst only 1.8 percent of the more than 5,300 Soldiers who had not deployed to Iraq or Afghanistan required spirometry (Szema et al. 2011).

The research conducted by Szema et al. also concluded that there are several different causes of the respiratory illnesses experienced by Soldiers who have deployed to Iraq or Afghanistan. One cause could be the toxic dust that is inhaled by Soldiers while deployed (Szema et al. 2011). Dust in Iraq and Afghanistan can contain toxins such as metals (aluminum, zinc, copper, nickel, iron, or lead) or fungi and bacteria (Szema et al. 2011). In normal conditions, these toxins are prevented from entering the body by protectants, such as nasal hair, in Soldiers' noses (Szema et al. 2011). With the hot and dry climate of Iraq and Afghanistan, Soldiers often breathe more through their mouths, where protectants do not exist, allowing Soldiers to inhale these toxins (Szema et al. 2011).

According to Szema et al., another possible cause of increased respiratory illnesses in Soldiers who have deployed to Iraq or Afghanistan is the inhalation of toxins due to burn pits (Szema et al. 2011). Burn pits are often used by the military to remove waste when incinerators are not available (Szema et al. 2011). The waste is burned and toxins are released which Soldiers inhale, leading to respiratory illnesses (Szema et al. 2011).

Szema et al. also reports that aeroallergens (or airborne substance such as pollen which can lead to an allergic reaction) could lead to an increase in respiratory illnesses experienced by Soldiers who have deployed to Iraq or Afghanistan (Szema et al. 2011). In the study conducted by Szema et al., along with the Veterans Affairs Medical Center, concluded that 9.9 percent of Soldiers who deployed to Iraq were diagnosed with rhinitis (an inflammation of mucous found in the nose caused by either a viral infection or an allergic infection), versus only 5.1 percent of Soldiers who had not deployed to Iraq or Afghanistan (Szema et al. 2011).

Overall, the study conducted by Szema et al. concluded that of approximately 7,000 Soldiers studied who received spirometry, 72 percent had deployed to Iraq or Afghanistan (Szema et al. 2011). The study also concluded that these findings were also the same, regardless of whether the Soldiers were male or female (Szema et al. 2011).

Behavioral Health Effects

> Never before has this country seen so many women paralyzed by the psychological scars of combat. As of June 2008, 19,084 female veterans of Iraq or Afghanistan had received diagnoses of mental disorders from the Department of Veterans Affairs, including 8,454 women with a diagnosis of post-traumatic stress–and this number does not include troops still enlisted, or those who have never used the V.A. system. (Cave 2009)

In addition to the multitude of possible physical health effects which women, and Soldiers in general, may experience following a combat deployment, there is also an expansive list of behavioral and mental health effects which male and female Soldiers experience. Even though fewer lives have been lost in OIF and OEF than in previous military conflicts, this may be the first time when psychological problems have exceeded physical problems in those returning from combat deployment (Carlson, Stromwall, and

Lietz 2013). Research on the mental health of Soldiers returning from combat deployment shows that as much as 11 percent to 17 percent of Soldiers may be at risk for some kind of mental health disorder within 3 to 4 months following a combat deployment (Gaylord 2006).

As of 2013, women made up 14 percent of the active duty force (Carlson, Stromwall, and Lietz 2013) which means that women are more likely to deploy in support of a combat operation, and are more likely to experience psychological problems following a combat deployment than in previous years. In a study conducted by the Society for Women's Health Research, it was reported that all Soldiers experience stress while deployed in support of a combat operation. Everyone's response to stress is different, and is determined by several influences, such as the type, length, and severity of the stressor, gender, early life experiences, and a person's environment (Gaylord 2006). As the study pointed out, "female service members face unique stressors that may impact their mental health" (SWHR 2009, 6).

Some research provides evidence that deploying to combat and combat exposure may affect a female Soldier's mental health differently than a male Soldier's mental health (Luxton, Skopp, and Maguen 2010). Luxton et al. explains one reason for the differences in a male and female Soldier's mental health following a combat deployment could be that women are more likely to internalize their experiences, leading to mental health issues such as depression (Luxton, Skopp, and Maguen 2010). According to a report by Wojcik, Akhtar and Hassell in 2009, following a combat deployment, women were 1.6 to 3 times more likely to suffer from a mental disorder, in addition to suffering

from PTSD, substance abuse, sexual harassment and sexual trauma, depression, and anger and hostility (Wojcik, Akhtar, and Hassell 2009).

Post-Traumatic Stress Disorder

> Research has shown that there are significant sex differences in diagnosis and treatment of PTSD in the general public. However, much less is known about PTSD in women returning from combat. With an increase in female Soldiers deploying, it is critical that military, Department of Veterans Affairs (VA), and private sector providers are prepared to identify and care for the unique needs of female service members, veterans, and contractors with PTSD. (SWHR 2009, 2)

Post-traumatic stress disorder (PTSD) is a prevalent mental health effect experienced by Soldiers who have served in combat operations. Research has shown that PTSD is experienced by 10 to 20 percent of all Soldiers who have deployed in support of combat operations in Iraq and Afghanistan, but the question of whether gender plays a part in the risk of being diagnosed with PTSD following a combat deployment is still unanswered (Crawford 2014). While a significant amount of research is available regarding the effects of PTSD in male Soldiers, very little research has been conducted to examine the unique effects of PTSD on female Soldiers who have deployed in support of combat operations, especially in conflicts such as Operation Iraqi Freedom and Operation Enduring Freedom (Carlson, Stromwall, and Lietz 2013). This lack of research raises the question as to whether PTSD affects female Soldiers differently than male Soldiers (Hoge et al. 2004).

Although there is limited research available on the effects of PTSD on women who have served in combat, much of what is available has proven that female Soldiers may be at a higher risk for suffering from PTSD than male Soldiers. When looking at non-military related mental health issues such as depression, anxiety disorders, and

PTSD, research conducted by Hoge et al. in 2002 concluded that women are at a higher risk for suffering from PTSD than men (Hoge, Clark, and Castro 2007). In the same study, it was determined that the same conclusion was reached when looking at the general military population in garrison, prior to the start of OIF and OEF (Hoge, Clark, and Castro 2007). In 2008, studies conducted by Tanielian et al. and Smith et al. found that female Soldiers were more likely than male Soldiers to screen positive for PTSD (and depression) following a deployment in support of combat operations (Maguen et al. 2010). Most recently in a report published in 2014 by the U.S. Department of Veterans Affairs, based off research conducted by the VA, it was determined that gender does play a significant role in PTSD amongst Soldiers (Crawford 2014). Additionally, the research conducted by the VA provided evidence that there was a link between the levels of combat exposure and PTSD, regardless of gender (Crawford 2014). Similar to the Hoge et al. finding, the research conducted by the VA also provided evidence that the correlation between combat exposure and PTSD was greater in females than in males; 22 percent of females were screened positive for PTSD while only 12 percent of males were diagnosed with PTSD (Crawford 2014). In contrast to the research conducted by the VA, a study conducted by Maguen et al. found that rates of PTSD were slightly higher in male Soldiers than in female Soldiers, with the belief that males are exposed to more combat over females, and thus male Soldiers are more likely to develop PTSD (Maguen et al. 2010).

In addition to being linked to the amount of combat exposure, the occurrence of PTSD in female Soldiers has been linked to additional mental and behavioral health issues. In a report published by the Office of Women's Health (OWH), it was identified

that women were more likely to develop PTSD if they had a history of past mental health problems such as depression, had experienced a severe or life-threatening trauma, had been sexually assaulted, were injured during an event and had a severe reaction, and do not have good social support (OWH 2010). Additionally, research seems to show that older women (over the age of 30 years old) are more likely to be diagnosed with PTSD over younger females (Maguen et al. 2010). When compared to men, older female Soldiers who had deployed in support of combat operations were more likely to suffer from PTSD than older male Soldiers who had deployed (Maguen et al. 2010).

Other studies have shown that there may be a link between higher rates of PTSD in female Soldiers who have served in the military and difficulty of the female Soldier adjusting to family life following redeployment (Crompvoets 2011). Supporting this idea, research conducted at the University of Michigan on the impacts of deploying on physical and mental health of Air Force women shows that female service members may be more likely to experience PTSD due to the difficulty in balancing work and family obligations simultaneously (Munsey 2009). When considering how older female Soldiers may have a higher risk of being diagnosed with PTSD, this could be caused by the fact that older women are more likely to have families and to be established in their communities, making it harder to return to reintegrate into their old lives after returning from combat deployment (Maguen et al. 2010).

Research provides several different reasons why male and female Soldiers may suffer from PTSD differently following a combat deployment. One reason for the difference could be that experiencing a sexual trauma, whether while deployed or as a child, can be linked to increased risk of PTSD following deployment in support of

combat operations (SWHR 2009). Since women are more likely to experience a sexual trauma, it supports the concept that women are more likely to suffer from PTSD following a deployment. Some researchers believe that another reason for gender differences in PTSD in Soldiers could be due to male Soldiers under-reporting mental health issues when they return from combat deployment, fearing that there will be personal and professional consequences for claiming mental health issues and wishing to seek treatment (Crompvoets 2011).

A report from the Society of Women's Health Research also provides several additional possibilities as reasons for gender differences in PTSD amongst Soldiers who have served in combat. One belief by some researchers is that females are more likely to remember and to hold onto a traumatic event after it is over and long after returning from a deployment, while male Soldiers are quicker to forget the traumatic events that they may have witnessed or experienced (SWHR 2009). It is also possible that female Soldiers possess stronger negative emotions, more often than male Soldiers, leaving females more susceptible to suffering from PTSD (SWHR 2009). Biologically speaking, it is also believed that female Soldiers are more likely to develop PTSD due to differences in the hypothalamic-pituitary-adrenal (HPA) axis, causing females to get more emotional with traumatic events, and thus more likely to develop PTSD (SWHR 2009).

While there are several researchers who believe that female Soldiers are more likely to develop PTSD following deployment in support of combat operations, some researchers have conducted studies which provide evidence that men and women may have the same risks of PTSD following exposure to combat stressors (Street et al. 2013). In research conducted by Street et al., studies show that it is possible for male and female

Soldiers to possess the same risk for develop PTSD due to both conducting the same military training, preparation, and exercises, which allows for males and females to be equally prepared to cope with stressors that could lead to PTSD while deployed (Street et al. 2013).

Military Sexual Trauma and Gender Harassment

Military sexual trauma (MST) is a substantial combat-related stressor which can lead to many different negative mental health issues amongst Soldiers who have deployed in support of combat operations (Street Vogt, and Dutra 2009). According to studies conducted by Street et al. in 2009, a substantial number of female Soldiers have been victims of military sexual trauma, a significantly traumatic experience (Street Vogt, and Dutra 2009). Studies have also shown that MST victims who deployed in support of OIF and OEF were 3.5 times more likely to suffer from some kind of mental health condition than female Soldiers who had not experienced sexual trauma while deployed (Street Vogt, and Dutra 2009).

As with many of the health effects on women who have served in combat, studies on MST are limited, and in particular, studies comparing MST experienced by male and female Soldiers is nearly nonexistent. Despite the limited data, studies have shown that the number of female Soldiers reporting having experienced MST while deployed has increased over the years. In a study conducted by Kimerling et al. in 2010 on veterans of Operation Iraqi Freedom and Operation Enduring Freedom, 15.1 percent of female Soldiers and .7 percent of male Soldiers admitted to have experienced MST (Mattocks et al. 2012). In a report published by the Committee on Health Care for Underserved Women in December 2012, 20 percent of female veterans receiving treatment through the

Veterans Health Administration reporting having a history of MST, a significant increase from two years prior. And in a report published by the Defense Advisory Committee on Women in the Services in 2010, studies based on the Veterans Affairs showed that women who have served in combat were more likely to screen positive for sexual trauma (DACOWITS 2010). Research available has also shown that MST is a very common stressor in females who have deployed, but rarely is it an issue amongst male Soldiers.

In addition to experiencing MST, many female Soldiers are exposed to sexual harassment while deployed in support of combat operations. Sexual harassment of women in the military has been studied extensively by the DoD for several years (Carlson, Stromwall, and Lietz 2013). In a study conducted by Carlson et al. in 2013, research found that between 50 percent and 90 percent of female Soldiers had reported sexual harassment, whether verbal or physical (Carlson, Stromwall, and Lietz 2013). In a study conducted by Street et al. in 2013, research found that 50 percent of the female Soldiers who have deployed in support of combat operations reported experiencing non-assault sexual trauma; only 11 percent of males interviewed experienced non-assault sexual trauma (Street et al. 2013). In the same study, 25 percent of women reported experiencing sexual assault, while only 1 percent of men experienced sexual assault (Street et al. 2013).

Research has shown that MST is often associated with the development of PTSD amongst Soldiers who have deployed in support of combat operations. Some studies have shown that MST may even have a larger role in the onset of PTSD than combat exposure and other wartime stressors (Carlson, Stromwall, and Lietz 2013). According to a study conducted by Munsey et al. in 2007, one in five females Soldiers who had deployed

experienced either MST, an incident of sexual assault, or sexual harassment (Munsey 2009). Additionally, in a study conducted by Maguen et al. in 2012, 31 percent of female OIF and OEF veterans diagnosed with PTSD, also suffered from MST; only 1 percent of male OIF and OEF veterans with PTSD experienced MST (Gutierrez et al. 2013).

In addition to correlating with PTSD, MST is also associated with other mental health issues, such as depression, substance abuse, and somatization (Carlson, Stromwall, and Lietz 2013). MST and sexual harassment have also been found to correlate with psychological issues such as suicide, depression, substance abuse, sexual dysfunction, difficulties with employment (Murdoch et al. 2006), homelessness (Carlson, Stromwall, and Lietz 2013), and physical and chronic health problems (Street Vogt, and Dutra 2009).

Military sexual trauma does not only effect female Soldiers, but male Soldiers can also experience MST. In a report published by the Society for Women's Health Research, studies showed that 6.8 percent of female Soldiers on active experienced unwanted sexual contact, and 1.8 percent of male Soldiers on active duty experienced unwanted sexual contact (SWHR 2009). Although experienced by both male and female Soldiers, female Soldiers are more likely to experience MST while deployed in support of combat operations (Street Vogt, and Dutra 2009).

In addition to experiencing MST and sexual harassment while deployed, female Soldiers may also be exposed to gender harassment (Street Vogt, and Dutra 2009). Gender harassment is not sexually-based, but is aimed at degrading someone based off their gender (Street Vogt, and Dutra 2009). In a study conducted by Lipari et al. in 2008, 54 percent of military women experienced some sort of gender harassment each year (Street Vogt, and Dutra 2009). Similar to MST, male Soldiers are just as likely to

experience some form of gender harassment, but female Soldiers are more likely to experience it (Street Vogt, and Dutra 2009). Some research has even shown that females may view gender harassment as more of an issue in the military than sexual harassment (2009).

The effects of MST, sexual harassment, and gender harassment can have significant impacts on a Soldier's mental health following a combat deployment. In particular, suffering from MST can have a serious impact on a female Soldier's ability to adjust to normal life once returning from deployment (Street et al. 2013). Women may experience difficulty in coping with the effects of MST once returning, and often even feel as if they lack support from military peers in recovering from MST (Street et al. 2013).

Depression

Depression has long been an issue amongst Soldiers, especially those returning from a combat deployment. In some studies, depression has even been found to be a more common mental health issue in combat veterans than post-traumatic stress disorder (Wells et al. 2010). With the recent conflicts in Iraq and Afghanistan, more and more research is being conducted to examine the effects of depression on Soldiers upon redeployment.

Research has been able to link the connection between deployment and PTSD, but little research has been done regarding the risk for depression (Wells et al. 2010). In an effort to gain more insight on the relationship of depression and Soldiers who have deployed in support of combat operations, a study, the Millennium Cohort Study, was initiated in 2001. The Millennium Cohort study is one of the largest studies currently

being conducted on the health effects of military service on service members (Wells et al. 2010). In this study, more than 30,000 male Soldiers and 10,000 female Soldiers, with no evidence of depression prior to deployment, were studied regarding the effects of combat exposure on mental health and new onset depression (Wells et al. 2010). The Millennium Cohort discovered that male and female Soldiers who had deployed and experienced combat exposure were more likely to develop depression over those Soldiers who had deployed and did not experience combat exposure while deployed (Wells et al. 2010). 5.7 percent of male Soldiers reported to be experiencing new onset depression, while 15.7 percent of female Soldiers reported new onset depression (Wells et al. 2010). Figures 1 and 2 show the percentage of new onset depression among male and female Soldiers, respectively, who had deployed and were exposed to combat versus those who were not exposed to combat while deployed, based on the results of the Millennium Cohort study.

Baseline Characteristics	Not Deployed, No. (%)	Deployed Without Combat Exposures, No. (%)	Deployed With Combat Exposures, No. (%)
Total	872 (3.9)	92 (2.3)	225 (5.7)
Birth year			
Pre-1960	219 (3.3)	22 (2.6)	26 (4.1)
1960–1969	346 (3.7)	38 (2.1)	85 (5.1)
1970–1979	280 (4.9)	26 (2.3)	90 (6.0)
1980–present	27 (5.8)	6 (5.1)	24 (13.0)
Education			
High school or less	471 (5.0)	48 (3.7)	165 (8.2)
Some college	212 (3.8)	26 (1.7)	38 (4.7)
College degree	189 (2.6)	18 (1.6)	22 (1.9)
Marital status			
Never married	211 (4.7)	22 (2.6)	76 (7.1)
Married	610 (3.7)	63 (2.2)	136 (5.0)
Divorced	51 (4.7)	7 (3.4)	13 (7.1)
Race/ethnicity			
Non-Hispanic White	671 (4.1)	71 (2.4)	167 (6.1)
Non-Hispanic Black	85 (4.1)	6 (1.7)	22 (6.2)
Other	116 (3.2)	15 (2.6)	36 (4.2)
Smoking			
Never smoker	422 (3.2)	50 (2.1)	107 (4.6)
Past smoker	247 (4.3)	22 (2.4)	51 (5.6)
Current smoker	203 (6.2)	20 (3.3)	67 (9.2)
CAGE/alcohol[a]			
No	655 (3.7)	73 (2.3)	176 (5.5)
Yes	217 (5.1)	19 (2.6)	49 (6.4)
Baseline PTSD[b]			
No	809 (3.7)	87 (2.2)	209 (5.4)
Yes	63 (17.3)	5 (13.5)	16 (22.9)
Military rank			
Enlisted	730 (4.7)	73 (2.5)	199 (7.1)
Officer	142 (2.2)	19 (1.8)	26 (2.2)
Service component			
Reserve/National Guard	404 (4.0)	34 (2.2)	94 (6.5)
Active duty	468 (3.9)	58 (2.4)	131 (5.2)
Branch of service			
US Army	485 (4.7)	31 (3.3)	170 (6.7)
US Air Force	185 (3.0)	35 (1.7)	32 (3.8)
US Navy/Coast Guard	160 (3.5)	21 (2.9)	11 (3.9)
US Marine Corps	42 (3.8)	5 (3.4)	12 (4.0)
Occupational category			
Combat specialists	188 (3.4)	15 (1.6)	55 (4.2)
Health care specialists	81 (4.8)	4 (3.3)	18 (5.8)
Service supply and functional	233 (4.2)	24 (2.9)	50 (6.0)
Other occupations	370 (3.9)	49 (2.4)	102 (6.7)

Figure 1. Percentage of New Onset Depression in Males

Source: Timothy S. Wells, Cynthia A. LeardMann, Sarah O. Fortuna, Besa Smith, Tyler C. Smith, Margaret A. K. Ryan, Edward J. Boyko, and Dan Blazer, "A Prospective Study of Depression Following Combat Deployment in Support of the Wars in Iraq and Afghanistan," *American Journal of Public Health* (January 2010): 93.

Baseline Characteristics	Not Deployed, No. (%)	Deployed Without Combat Exposures, No. (%)	Deployed With Combat Exposures, No. (%)
Total	654 (7.7)	45 (5.1)	117 (15.7)
Birth year			
Pre-1960	125 (6.0)	3 (3.0)	19 (20.0)
1960–1969	212 (6.7)	13 (4.0)	32 (12.9)
1970–1979	258 (9.3)	24 (6.5)	52 (16.2)
1980–present	59 (11.0)	5 (5.1)	14 (17.7)
Education			
High school or less	326 (9.2)	25 (6.7)	73 (18.8)
Some college	161 (7.6)	14 (4.6)	18 (13.4)
College degree	167 (5.8)	6 (2.8)	26 (11.7)
Marital status			
Never married	234 (7.7)	18 (4.7)	49 (13.8)
Married	327 (7.3)	22 (5.4)	54 (18.4)
Divorced	93 (8.8)	5 (5.0)	14 (14.7)
Race/ethnicity			
Non-Hispanic White	449 (8.3)	30 (5.5)	74 (17.3)
Non-Hispanic Black	108 (6.2)	9 (4.7)	26 (17.9)
Other	97 (6.9)	6 (3.9)	17 (10.0)
Smoking			
Never smoker	363 (6.5)	24 (4.1)	68 (14.5)
Past smoker	175 (9.4)	10 (5.8)	25 (16.5)
Current smoker	116 (10.6)	11 (8.1)	24 (19.5)
CAGE/alcohol[a]			
No	560 (7.4)	38 (4.8)	95 (14.6)
Yes	94 (9.9)	7 (6.7)	22 (23.7)
Baseline PTSD[b]			
No	615 (7.3)	44 (5.0)	114 (15.6)
Yes	39 (23.9)	1 (14.3)	3 (25.0)
Military rank			
Enlisted	517 (8.7)	43 (6.0)	98 (18.3)
Officer	137 (5.3)	2 (1.1)	19 (9.1)
Service component			
Reserve/National Guard	312 (7.1)	20 (5.5)	54 (15.4)
Active duty	342 (8.3)	25 (4.8)	63 (16.0)
Branch of service			
US Army	361 (8.5)	23 (6.7)	89 (17.3)
US Air Force	147 (5.9)	16 (4.0)	16 (10.5)
US Navy/Coast Guard	133 (8.2)	6 (4.3)	12 (18.5)
US Marine Corps	13 (7.2)	0 (0.0)	0 (0.0)
Occupational category			
Combat specialists	37 (7.5)	3 (3.6)	5 (7.7)
Health care specialists	158 (7.2)	5 (7.4)	18 (9.8)
Service supply and functional	281 (7.6)	18 (4.3)	59 (22.6)
Other occupations	178 (8.3)	19 (5.9)	35 (14.9)
Cumulative length of deployments[c]			

Figure 2. Percentage of New Onset Depression in Females

Source: Timothy S. Wells, Cynthia A. LeardMann, Sarah O. Fortuna, Besa Smith, Tyler C. Smith, Margaret A. K. Ryan, Edward J. Boyko, and Dan Blazer, "A Prospective Study of Depression Following Combat Deployment in Support of the Wars in Iraq and Afghanistan," *American Journal of Public Health* (January 2010): 94-95.

The Millennium Cohort study shows that both male and female Soldiers who were exposed to combat while deployed were more likely to have new onset depression

over those Soldiers who had not been exposed to combat while deployed (Wells et al. 2010). Supporting these findings, a study conducted by Haskell et al. determined that while male Soldiers returning from combat deployment may have slightly higher instances of PTSD, female Soldiers are found to have higher rates of all types of depression, as well as higher rates of adjustment disorders (Haskell et al. 2011). According to Haskell et al., female Soldiers who have deployed in support of OIF and OEF have shown higher rates of depression over male Soldiers (Haskell et al. 2011). One reason for this difference is that female Soldiers are more likely to report symptoms of depression (Figure 3), whereas males are less likely to report symptoms (Street et al. 2013).

	Women (n=1,207)	Men (n=1,137)	OR (95 % CI)
Probable PTSD	21.0 %	23.4 %	0.87 (0.70, 1.1)
Probable Depression	38.3 %[a]	31.8 %	1.3 (1.1, 1.6)
Symptomatic Anxiety	24.1 %	23.1 %	1.1 (0.86, 1.3)
Clinically Significant Alcohol Use	17.7 %	26.9 %[a]	0.59 (0.47, 0.72)

[a]*Denotes group that is significantly more likely to report experience*

Figure 3. Gender Differences in Symptoms Consistent with Mental Health Conditions

Source: Amy E. Street, Jaime L. Gradus, Hannan L. Giasson, Dawne S. Vogt, and Patricia A. Resick, "Gender Differences Among Veterans Deployed in Support of the Wars in Afghanistan and Iraq," *Journal of General Internal Medicine* (2013): S560.

As with many mental health issues, depression is often found to be comorbid with other mental health issues such as PTSD, anxiety disorders, agoraphobia, and social issues such as lack of sense in belonging (Wells et al. 2010). In a survey conducted at Walter Reed Army Medical Hospital and Bethesda Naval Hospital, women comprised 13 percent of all patients who were being treated for PTSD, and 35 percent of the female patients were suffering from more depression than the male patients (SWHR 2009). Often, depression and other mental health issues exist at varying levels depending on the amount of combat exposure experienced during a deployment, and the type of trauma experienced or witnessed (Wells et al. 2010).

Overall, research on depression in female Soldiers returning from OIF and OEF is limited and inconsistent (Carlson, Stromwall, and Lietz 2013). According to research conducted by Carlson et al., percentages of female Soldiers who had participated in a combat deployment ranged from 8 percent to 72 percent (Carlson, Stromwall, and Lietz 2013). In the Iraq War study group conducted by Rona et al., 26.7 percent of women were reported to have higher levels of psychological distress, which is associated with depression, while men reported only 19.8 percent (Hoge, Clark, and Castro 2007). In a study conducted by Luxton et al. aimed at determining differences in depression amongst men and women who have deployed in support of combat operations in Iraq and Afghanistan, research showed that amongst men and women with comparable rates of depression prior to deployment, the amount of combat exposure experienced during deployment has a larger effect on depression (and PTSD as well) following deployment in women than in men (Luxton, Skopp, and Maguen 2010). Although depression does

increase in both males and females following a combat deployment, females experience a greater increase in depression than males (Luxton, Skopp, and Maguen 2010).

Different factors can lead to the varying ranges of depression rates among female veterans. For one, some research has shown that females are naturally at a higher risk for depression than males (Wells et al. 2010). According to a study by Wells et al., females' higher risk of depression could be caused by hereditary factors and the fact that females are biologically more vulnerable to depression (Wells et al. 2010). Additionally, research has shown that women over the age of 40 years old were at a higher risk for experiencing depression over younger females (Maguen et al. 2010). Studies have also shown that women who were married or divorced were also at a higher risk for experiencing depression following a combat deployment (Wells et al. 2010). This could be related to postpartum depression, lack of social support while deployed, and separation anxiety (Wells et al. 2010).

Suicide

Increased combat exposure does not only increase the risk of depression amongst Soldiers who have deployed in support of combat operations, but it also increases the risk of suicide amongst Soldiers following deployment (Luxton, Skopp, and Maguen 2010). In a qualitative study conducted by Gutierrez et al. in 2013 which focused on female Soldiers and suicide, research showed that females accounted for 4.63 percent of suicides amongst service members in 2010, and approximately 25 percent of all suicide attempts (Gutierrez et al. 2013). This is a significant amount considering females make up less than 15 percent of the active duty population. According to the study conducted by Gutierrez et al., suicide was most often mentioned by women in responses during

interviews when discussing not only the idea of attempting to suicide, but when referring to suicide as the best way to cope with issues following their combat deployments (Gutierrez et al. 2013). In a study conducted by McFarland, Kaplan, and Huguet in 2010, women who have served in the military were more likely to die by suicide than women who have not served in the military (Gutierrez et al. 2013).

The study conducted by Gutierrez et al. showed that increased thoughts of suicide in women who had deployed in support of combat operations, including OIF, OEF, and OND, were often tied to feelings of burdensomeness, failed belongingness, and physical and emotional pain (Gutierrez et al. 2013). Burdensomeness is a feeling that many female Soldiers get when they feel as if they cannot ask for help when they have a problem, such as experiencing suicidal thoughts, because needing help is a sign of weakness (Gutierrez et al. 2013). This feeling is often caused by the culture of an organization and the way Soldiers are trained (Gutierrez et al. 2013). This can lead to females having more difficulty in dealing with thoughts of suicide and not getting the appropriate help they need.

Failed belongingness is also commonly associated with some women who experience issues with suicide following their return from combat deployment. Female Soldiers will often feel as if they do not belong because they are in a male-dominated field and there are very few females to associate with (Gutierrez et al. 2013). Additionally, women also have a failed sense of belongingness following a combat deployment, especially those women who return to civilian life after departing from military service (Gutierrez et al. 2013). Women have difficulty feeling like a part of society, especially working around people who have never served in the military and who

cannot understand what they may have experienced while deployed (Gutierrez et al. 2013). Female Soldiers not only have difficulty feeling as if they fit in with society, but they also have trouble relating with other women who have not had the same experiences (Gutierrez et al. 2013).

The study conducted by Gutierrez et al. also shows that pain, both physical and emotional, also leads to increased incidences of suicide amongst female Soldiers who have deployed in support of combat operations (Gutierrez et al. 2013). If the proper treatment for physical and emotional pain is not received, female Soldiers may look to other means of coping with the pain, some extreme as suicide. These feelings can all lead to female Soldiers having issues with suicide following a combat deployment. Women can feel as if they did not fit in while serving in the military, and then they do not feel as if they fit in once they return from military service, leading them to use suicide as a way of coping.

Substance Abuse and Eating Disorders

Suicide is not the only means in which a Soldier may cope with the effects of having served in combat. Research has also shown that many Soldiers may also turn to substance abuse and eating disorders as a way of dealing with the stressors associated with issues such as PTSD, depression, or physical pain following a deployment in support of military operations. In addition to linking suicide with depression and PTSD, some research has shown that there is a link between substance abuse and sexual harassment and MST, which are common effects of deployment on female Soldiers in particular (Carlson, Stromwall, and Lietz 2013), possibly leading to the higher instances of alcohol abuse amongst female Soldiers returning from combat deployment.

In a study conducted by Carlson et al., substance abuse, including both alcohol abuse and drug abuse, is often found to be an issue amongst female Soldiers returning from recent conflicts such as OIF and OEF (Carlson, Stromwall, and Lietz 2013). Carlson et al. found that female Soldiers who had recently returned from combat deployment were experiencing noticeable amounts of alcohol abuse. Carlson et al. reports that between 5 percent and 35 percent of female Soldiers who have deployed in support of combat operations such as OIF and OEF display signs of alcohol abuse following their redeployment (Carlson, Stromwall, and Lietz 2013). The range in percentages is due to the fact that Carlson et al. discovered it is very difficult to report on the number of female Soldiers with combat experience who suffer from alcohol abuse because of the many different ways of measuring alcohol abuse (Carlson, Stromwall, and Lietz 2013). Issues with alcohol abuse do not affect only active duty female Soldiers, but National Guard and Reserve Soldiers as well. In a study conducted in 2008 by Jacobson et al., 30 percent of female National Guard and Reservist Soldiers were found to be binge drinkers (defined as having four or more drinks on one occasion) and between 7.4 percent and 10 percent were found to be heavy drinkers (Carlson, Stromwall, and Lietz 2013).

Although alcohol abuse is a common health effect in women who have deployed, research has also found that women often turn to the use of prescription drugs as a way to cope with combat-related stress following redeployment (Mattocks et al. 2012). Research has also shown that women who have served in combat may also suffer from eating disorders (EDOs) after returning from a combat deployment. In a study conducted by Maguen et al. in 2010, research showed that anxiety and EDOs were more commonly diagnosed in female Soldiers who had recently returned from deployment in support of

OIF and OEF, in comparison to male Soldiers (Maguen et al. 2010). Maguen et al. also found that the number of female Soldiers suffering from EDOs may actually be higher than reported, due to eating disorders being underreported by female Soldiers and undertreated by health care experts (Maguen et al. 2010).

EDOs among female Soldiers who have deployed in support of combat operations often coexist with other health effects, such as sexual trauma and PTSD as seen in Figure 4 below. In a study conducted by Forman-Hoffman et al. in 2012 where approximately 1,000 female Soldiers who had deployed in support of combat operations were studied, Forman-Hoffman et al. found that women were twice as likely to suffer from an EDO when they had also reported experiencing PTSD or sexual trauma, during their military service or in their lifetime, than women who did not suffer from PTSD or suffer from sexual trauma (Forman-Hoffman et al. 2012). Of the approximate 1,000 female Soldiers studied, nearly one-third reported experiencing military sexual trauma (both attempted and completed rape), leading researchers to believe that women who suffer from military sexual trauma are at a higher risk for developing and EDO as a way to cope with the difficulties associated with military sexual trauma (Forman-Hoffman et al. 2012).

Combination of Experiences	*n* (%)
Sexual Trauma Only	340 (34.0)
None	316 (31.6)
Sexual Trauma and PTSD	147 (14.7)
Sexual Trauma and Eating Disorder	74 (7.4)
Sexual Trauma, PTSD, and Eating Disorder	59 (5.9)
PTSD Only	36 (3.6)
Eating Disorder Only	24 (2.4)
PTSD and EDO Only	4 (0.4)
Total	1,000 (100)

[a]Lifetime diagnosed or ever suffered from an EDO. [b]Lifetime diagnosed with PTSD. [c]Lifetime completed rape or attempted sexual assault.

Figure 4. Overlap of EDOs, PTSD, and Sexual Trauma Among Female Veterans

Source: Valerie L. Forman-Hoffman, Michelle Mengeling, Brenda M. Booth, James Torner, and Anne G. Sadler, "Eating Disorders, Post-Traumatic Stress, and Sexual Trauma in Women Veterans," *Military Medicine* (October 2012): 1165.

Social Issues

In addition to the many behavioral health issues experienced by women who have served in combat, there are also many social issues that female Soldiers experience that can affect their behavioral health, both during the deployment and upon redeployment. Some of the issues that women may suffer from during and following a deployment in support of combat operations are difficulties in coping with separation from family, feelings of isolation, difficulties in reintegrating with family and society, difficulties in returning to work following a deployment, and a lack of social support. Female Soldiers may experience different social issues than male Soldiers, and despite the increase of women serving in combat over the last decade with OIF and OEF, little research is

available that examines how these different social issues may affect the behavioral health of females who have deployed in support of combat operations.

Coping with Deployment

Regardless of gender, being away from family, friends, and children while deployed is a significant cause for stress amongst Soldiers. Even though male Soldiers may experience this stress while away from their families and friends, deployed women may face different challenges than men while deployed and away from their families (Gutierrez et al. 2013). Not only is there a concern for the effects of being away from family on women, but female Soldiers are also concerned with how being deployed for long periods of time affects their family, and especially their children (Crawford 2014).

Studies have shown that female Soldiers undergo additional deployment-related stress from having to cope with the demands of caring for their families from afar (Mattocks et al. 2012). Although men and women often share in the responsibilities of taking care of the family and home, women still typically have more responsibilities, such as taking care of the children, housekeeping, and cooking (Mattocks et al. 2012). Because of these responsibilities being left behind when they deploy, female Soldiers often worry about these responsibilities having to be taken care of by others while away from their families, causing considerable amounts of stress on female Soldiers while deployed (Mattocks et al. 2012). Ultimately, many female Soldiers still attempt to provide virtual care for their families while deployed, leaving women suffering from combat-related stress of the deployment, as well as stress related to taking care of families from afar (SWHR 2009).

Coping with Redeployment

With these additional stressors placed on female Soldiers while deployed, the question is raised as to how women cope with these added stressors experienced while deployed once they return home. In a study conducted by Mattocks et al. in 2009, a group of female Soldiers who had served in combat were interviewed regarding how they coped with combat-related stressors following their redeployment (Mattocks et al. 2012). The study showed that women will often seek out ways of coping with the negative effects of deployment-related stress, such as developing eating disorders (EDOs), compulsive spending, over-exercising, and prescription drug use (Mattocks et al. 2012).

Research has also shown that a woman's ability to reintegrate with family and society may also affected by the multitude of deployment-related stressors experienced while serving in combat (Crompvoets 2011; Wells et al. 2010). Studies have also shown that the ability for female Soldiers to reintegrate with family and society after deployment may differ significantly than male Soldiers (Wells et al. 2010). An example of this is how a female Soldier may be expected to resume routine family care immediately upon returning from deployment, while also coping with the physical and behavioral health effects from the deployment, as a woman typically has more responsibilities in taking care of the family than men do (Wells et al. 2010).

Reintegration can also be difficult for the children of deployed mothers. Studies have shown that a child's separation from their mother in their early childhood could disrupt the bond between a mother and her child (Street Vogt, and Dutra 2009). The long-term separation between a mother and her child due to deployments in support of OIF and OEF may lead a child to develop behavioral issues themselves, leaving a mother to

deal with her own health issues as well as her child's upon redeployment (Street, Vogt, and Dutra 2009). Research has also shown that little help is provided in the sense of family reintegration by the military, leaving female Soldiers, especially single mothers, to cope with these additional post-deployment stressors alone, adding to their many other post-deployment health issues (Mattocks et al. 2012).

Female Soldiers are also likely to cope with the different combat-related health after redeploying by isolating themselves from family, friends, and society (Mattocks et al. 2012). Choosing to isolate themselves after returning home is a way to cope with the many deployment-related stressors, especially since while deployed female Soldiers often felt isolated and as if they did not belong. In a study conducted by Mattocks et al., research showed that women were more likely to shut out others from their lives after redeploying, rather than seeking to reconnect with family and friends, or to share their deployment experiences with other Soldiers (Mattocks et al. 2012). The study also showed a relationship between showing signs of isolationism and EDOs, such as overeating (Mattocks et al. 2012).

Social Support

Research has shown that social support from family and friends, both during deployment and during the reintegration process, can significantly improve a female Soldier's ability to cope with the myriad of deployment-related stressors (Mattocks et al. 2012). Research has also shown that female Soldiers report receiving less social support from their peers during deployment, which can increase the effects of combat-related stressors, making redeployment even more difficult (Carlson, Stromwall, and Lietz 2013). Some studies have even shown that the lack of positive relationships with others

and support from peers while deployed has a greater impact on coping with deployment-related health issues after redeploying, than the lack of social support at home following a deployment (Street, Vogt, and Dutra 2009). In contrast, some research has shown that female Soldiers' perception of social support while deployed is lower, affecting how a woman feels while deployed and how she may cope with deployment-related stressors upon redeployment (Street, Vogt, and Dutra 2009).

Programs

> While we have made tremendous strides over the past decade, there is still much work to be done," said Army Vice Chief of Staff Gen. Peter Chiarelli. "This war, as we often hear it described, is a marathon, not a sprint. And, as mentioned, many of our biggest challenges lie ahead after our Soldiers return home and begin the process of reintegrating back into their units, families and communities. (Office of the Chief of Public Affairs Press Release 2012)

With the amount of Soldiers who have deployed in support of combat operations such as OIF and OEF increasing significantly over the past decade, the Department of the Army and the Department of Defense has recognized that taking care of Soldiers' medical and behavioral health following deployment is important to the overall health of our military force. In order to help assess the health effects of combat on Soldiers, several programs exist, or have been established by the government and the Department of Defense, to assist in providing adequate care to Soldiers once they return from deployment. Some of the programs that focus on the health and well-being of Soldiers, particularly following a combat-deployment are the Post-Deployment Health Reassessment Program, the Defense Department Advisory Committee on Women in the Services, and the Department of Veterans Affairs.

Post-Deployment Health Reassessment (PDHRA) Program

In March 2005, the Department of Defense established the Post-Deployment Health Reassessment Program in order to help identify and address health effects of deployment on service members (DoD DHCC 2014). The program applies to all service members, as well as Department of Defense civilian employees and Department of Defense contractor personnel (DoD DHCC 2014). Within one month of the start of combat operations in Iraq, the Department of Defense recognized the need to assess the health of Soldiers prior to deploying and to identify any deployment-related health effects experienced by Soldiers upon redeployment, and mandated that all Soldiers would complete the PDHRA Department of Defense Form (DD Form) 2976 immediately upon returning from a deployment, followed by the DD Form 2900 between 90 and 120 days after returning from a deployment (Hoge, Auchterlonie, and Milliken 2006). These forms are intended to help military personnel and health care providers screen for medical health issues caused by deployment, asking questions regarding general health, physical symptoms, mental health concerns, and exposure concerns (Hoge, Auchterlonie, and Milliken 2006). After Soldiers complete the questionnaire, the forms are reviewed and Soldiers are immediately interviewed one-on-one by a health care professional, such as a physician, nurse practitioner, physician assistant (Hoge, Auchterlonie, and Milliken 2006). Health care professionals then make a determination of whether the Soldier requires a referral for further evaluation, based off the information gathered on the questionnaire form and the interview (Hoge, Auchterlonie, and Milliken 2006).

The overall goal of the PDHRA program is to identify health concerns as early as possible following deployment, and to ensure that Soldiers are receiving adequate and

accurate health care when needed, hopefully preventing additional major health issues from developing, particularly mental health issues (Gaylord 2006). The earlier health problems are identified and treated, especially when referring to mental health issues such as PTSD and depression, the less likely these mental health issues will progress to chronic and severe levels (Gaylord 2006).

Some health care and government officials question the validity and timing of the PDHRA program, and thus question whether the PDHRA is effective enough to continue implementing during the redeployment process (Gaylord 2006). According to a study conducted by Gaylord et al., observations suggest that Soldiers may not accurately answer the questions on the PDHRA forms, due to the desire to want to complete their redeployment tasks and return to their families as soon as possible (Gaylord 2006). Research has also shown that Soldiers may not accurately complete the questionnaire forms due to lack of visible symptoms of deployment-related health issues at the time. "Mental health issues may be acute or may not become an issue until months after post-deployment" (Gaylord 2006, 354). As for the timing of questionnaires being completed, the reassessment is required to be conducted between 90 and 120 days following redeployment, but is often not completed as mandated (Gaylord 2006). Failure to complete the required reassessment forms could be caused by Soldiers being reassigned, military moves, departure from active duty service, and even being deployed again (Gaylord 2006).

In addition to validity and timing, there are other concerns with the effectiveness of the PDHRA program. As reported by Hoge et al., there is some controversy regarding the use of mass population-level screening that is conducted to identify deployment-

related health issues (Hoge, Auchterlonie, and Milliken 2006). Some also believe that the questions on the assessment form do not adequately help to identify all possible health issues a Soldier may experience following a deployment in support of combat operations (Hoge, Auchterlonie, and Milliken 2006). For example, the PDHRA form does not screen for anxiety disorders besides PTSD, and does not screen for different substance abuse, assuming that Soldiers have limited access to alcohol and other substances while deployed (Hoge, Auchterlonie, and Milliken 2006). These gaps in gathering information regarding all possible deployment-related health issues lead officials to question the effectiveness of the PDHRA program altogether.

Whether the PDHRA program is completely effective or not, the program has placed an increased burden on the military medical system (Hoge, Auchterlonie, and Milliken 2006). Based on answers provided on the questionnaire, health care officials must refer any Soldier that may have answered a question in a way that could lead someone to believe they were suffering from a deployment-related health issue (Hoge, Auchterlonie, and Milliken 2006). Often times, the Soldier is referred and seen by a health care specialist, and it is determined that they do not meet the qualifications for that specific deployment-related health issue. Health care specialists may be inundated by appointments with Soldiers who, in the end, do not require special care, but it is better to be sure that Soldiers do not need the care than to let them go untreated.

DACOWITS

With the military's recent decision to place women in more combat-specific military occupational specialties, the Department of Defense has tasked several groups with the primary purpose of conducting studies on the different issues related to allowing

women into combat roles, such as the Defense Advisory Committee on Women in the Services (DACOWITS).

The purpose of the DACOWITS is to provide advice and recommendations to the Department of Defense regarding matters and policies for women in the military with a focus on recruitment, retention, and advancement. With women playing an integral role in recent conflicts such as Operation Iraqi Freedom and Operation Enduring Freedom, the DACOWITS has focused many of their studies on the medical wellness of women in combat. Although many of the reports provided by DACOWITS are very useful in identifying and discussing the many different medical and behavioral health effects which women experience, most of their research references issues that women experience during combat deployment, not what is experienced on a long-term basis after they return home. This gap leads to a serious need for the Army and the Department of Defense to refocus some of their research priorities in order to address those issues that women experience following a deployment, and while still on active duty.

Veterans Affairs

The Department of Veterans Affairs (VA) was established in 1930 by Congress with the purpose of supporting veterans following their military service, by providing benefits and support (Department of Veterans Affairs 2014). It is a government-run military veteran benefit system, and is the United States government's second largest department with a federal budget of more than $75 billion a year (Department of Veterans Affairs 2014). Two of the 16 major initiatives of the VA is improving veterans' mental health and improving the quality of health care while reducing cost (Department of Veterans Affairs 2014).

Recent wars in Iraq and Afghanistan have increased the current number of veterans in the United States to 21.2 million, of which 1.6 million veterans are women (U.S. Bureau of the Census 2013). With a large amount of veterans in the United States seeking health care through the VA, the VA has an opportunity to directly study the many different combat-related health effects experienced by both male and female Soldiers. This allows the VA to serve as a source of data to the Department of Defense regarding information on patients being treated through the VA health care system. Unfortunately, the VA can only provide statistics and studies on those veterans who receive care through the VA, and does not account for Soldiers still on active duty, or those that have departed from military service and do not seek health care through the VA system.

Summary

This chapter has provided a review of the literature available regarding the different medical and behavioral health effects on women who have served in combat, as well as the different programs that currently exist which examine and assess the health effects suffered by men and women who have deployed in support of combat operations. The next chapter will discuss the manner in which the research was conducted in order to answer the primary research question, “What are the different medical and behavioral health effects on women who have served in combat, and how these health effects differ from males?”

CHAPTER 3

RESEARCH METHODOLOGY

This chapter will explain how the primary and secondary questions were researched and answered. Overall, this study consists of a comparative analysis of previously conducted quantitative and qualitative research, revealing the multitude of combat-related medical and behavioral health effects on both men and women who have served in combat during Operation Iraqi Freedom, Operation Enduring Freedom, and Operation New Dawn. The majority of data currently available on this subject is quantitative. The quantitative data collected through research in support of this thesis was analyzed in order to develop conclusions regarding the medical and behavioral health effects on women who have served in combat.

Research Planned But Not Executed

In an attempt to gain more qualitative research on the medical and behavioral health effects experienced by women who have served in combat, the researcher originally intended to conduct a survey amongst the female student population currently attending Command and General Staff College. Additionally, this survey would have also compared the opinions of the female subjects on whether or not they felt the Army and the Department of Defense have adequately helped to identify and address the medical or behavioral health effects that they had experienced following a combat deployment. Unfortunately, due to unforeseen personal medical issues, the researcher was unable to conduct any surveys in support of this thesis.

Summary

This purpose of this chapter was to describe how the research was conducted in order to determine what the different medical and behavioral health effects are on women who have served in combat. In addition, the research was also conducted to determine if the medical and behavioral health effects suffered by female Soldiers who have served in combat differ from their male counterparts. Chapter 4 will analyze all the research data presented in this thesis and the final chapter, chapter 5, will conclude the thesis and will present the conclusion and recommendations regarding the medical and behavioral health effects on women who have served in combat.

CHAPTER 4

FINDINGS AND ANALYSIS

Introduction

This chapter will provide an in-depth analysis of the qualitative and quantitative research discussed in the literature review that is necessary in order to answer the primary question, "What are the different medical and behavioral health effects on women who have served in combat, and how these health effects differ from males?" This chapter will also analyze the data presented in the literature review in order to provide answers to the secondary questions of this thesis.

Findings

After an in-depth analysis of the research presented in chapter 2, the following facts can be determined regarding the medical and behavioral health effects of women who have served in combat, and how they may differ from males:

1. Female Soldiers experience similar amounts of back and joint problems as male Soldiers, but female Soldiers experience more problems with limb pain, myositis, myalgia, and muscle spasms.

2. Women are at a much higher risk for experiencing reproductive health issues during and following combat deployment. Additionally, reproductive health issues can be linked to other health issues, particularly mental health issues.

3. Male and female Soldiers are equally susceptible to suffering from a mTBI during a deployment in support of combat operations. The difference with mTBI and

gender is that female Soldiers are more likely to receive outpatient care for instances of mTBI.

4. Very little research has been conducted which studies the risk of male or female Soldiers developing respiratory illnesses while deployed in support of combat operations, and thus a conclusion can not be made regarding respiratory illnesses and gender differences.

5. Research is mixed whether female Soldiers are more often diagnosed with PTSD than male Soldiers. But research has proven that female Soldiers may be at a higher risk for suffering from PTSD than male Soldiers. Studies have also shown that there is a relationship between being diagnosed with PTSD and suffering from depression, MST, lack of social support, difficulties with reintegration following deployment, and the amount of combat exposure experienced during deployment. Additionally, research has found that older women are more likely to develop PTSD, while younger men are more likely to develop PTSD.

6. One study shows that 15.1 percent of female Soldiers studied reported experiencing MST, while only .7 percent of male Soldiers experienced MST. MST affects both male and female Soldiers. Women who experienced MST while deployed were 3.5 times more likely to suffer from other mental health issues, such as depression or PTSD. Additionally, more than 50 percent of female Soldiers studied experienced some sort of sexual harassment, while only 11 percent of male Soldiers studied experienced sexual harassment. Similar to PTSD, MST is also linked to other mental health issues such as depression, substance abuse, suicide, sexual dysfunction, employment issues, and homelessness. Gender harassment is also commonly experienced

by female Soldiers, with 54 percent reporting experiencing gender harassment while serving in the military.

7. Female Soldiers are three times more likely to report suffering from depression following a combat deployment than male Soldiers. Experiencing depression has been found to be connected with the amount of combat exposure experienced during a deployment. Depression is also comorbid with PTSD, anxiety disorders, and social issues following combat deployment.

8. Suicide is more often considered by female Soldiers than male Soldiers as a way of coping with the different deployment-related health effects after redeploying from combat operations.

9. Women are more likely to suffer from substance abuse, particularly prescription drugs, and eating disorders as a way of coping with deployment-related health effects after deploying in support of combat operations. Men are more likely to experience alcohol abuse.

10. Women have been found to have more difficulty in coping with the many deployment-related health effects than men, causing women to have more difficulty in reintegrating upon redeployment. Female Soldiers experience more stress when considering separation from family and friends, and especially children. Female Soldiers also have more difficulty in coping with reintegrating into home life after a combat deployment. To cope with reintegration issues, women often develop eating disorders, compulsive spending, over-exercising, and prescription drug use. Female Soldiers often turn to isolating themselves from family and society as a way to cope with post-deployment health issues.

11. Female Soldiers often lack social support while deployed and after returning from a deployment, which can affect their ability to cope with the other deployment-related health effects they may be suffering from.

12. Some research has not been conducted to evaluate how effective the PDHRA program is at identifying and addressing the physical and behavioral health effects of Soldiers in general. But due to the small amounts of research available, it is difficult to conclude whether the PDHRA program is successful at identifying female-specific deployment-related health issues.

Summary

In conclusion, based off the research analyzed in chapter 2, the answer to the primary question of "What are the different medical and behavioral health effects on women who have served in combat, and how these health effects differ from males?" is there are many different medical and behavioral health effects on women who have served in combat. Additionally, although there are mixed results determining whether there are gender differences in physical and behavioral health effects on Soldiers who have deployed in support of combat operations (Maguen et al. 2010), there is some evidence that some medical and behavioral health effects are more commonly found in female Soldiers, and some are more commonly found in male Soldiers. Additionally, it can be concluded that there are, in fact, differences in medical and behavioral health effects between men and women during the first year following a combat deployment (Haskell et al. 2011).

Regarding the secondary question of "How does the Army and the Department of Defense identify and address the different medical and behavioral health effects

experienced by female Soldiers after returning from combat deployment?", it can be concluded that the Department of Defense uses the PDHRA program to identify and address the different medical and behavioral health effects of deployment on all Soldiers, Civilians, and Contractors returning from combat deployment. Besides the PDHRA program, the research conducted in this thesis also concluded that there are several other agencies and programs that currently examine the medical and behavioral health effects on women who have served in combat. Agencies such as the Defense Advisory Committee on Women in the Services (DACOWITS) and the Department of Veterans Affairs (VA) also exist to help improve health care provided to Soldiers, especially those who have deployed in support of combat operations.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Recommendations

Based off the findings and analysis in the previous chapter, three recommendations can be made regarding the study of the medical and behavioral health effects of women who have served in combat: (1) improved leader education regarding the importance of understanding how gender plays a role in the medical and behavioral health effects following deployment, and how females may be affected different than males; (2) changes in the post-deployment health assessment program need to be made in order to better capture the health effects on Soldiers following deployment in support of combat operations; and (3) health care providers need to be aware of how males and females may require different health care treatment for deployment-related health care issues.

Even after more than a decade of deploying in support of operations in Iraq and Afghanistan, leaders in the military are still unaware of how gender may play a role in the medical and behavioral health of Soldiers after returning from deployment. This is particularly true with the recent emphasis on placing women in more combat-specific military occupational specialties. Leaders must be taught that even though females are just like any other Soldier in their formation, the effects of combat may be different in females, and females may require different health care than their male counterparts. Teaching leaders this difference will help to build a culture where it is acceptable for all Soldiers to seek the health care they require, even if that means female Soldiers may require different or special care in comparison to male Soldiers in their units.

In order to better identify and address the different medical and behavioral health effects of deployment in support of combat operations on females, the PDHRA forms need to be reformatted. The current forms used do not fully enable a Soldier to identify and express all of the different medical and behavioral health effects which they may be suffering from after returning from deployment (such as substance abuse). Additionally, the process in which the information is gathered could be changed in order to ensure that Soldiers are not completing the forms as quickly as possible in order to complete their reintegration tasks and begin their reintegration leave. Having Soldiers complete the form prior to departing from their combat duty location, when the effects are more prevalent, may be a better way to get more accurate identification of health issues.

Health care providers, especially those in the military, need to be better educated on the differences in medical and behavioral health effects on women who have deployed in support of combat operations when compared to men. “Female veterans are a group who need health services that understand their unique needs, with well informed and appropriately trained health care providers” (Crompvoets 2011, 25). Currently, most health care providers follow the same exact procedures when meeting with a patient, asking the same questions and providing the same type of medical treatment, in order to get through as many patients as possible, instead of spending more quality time with each Soldier to ensure they are getting the proper medical treatment needed.

Additionally, the medical treatment women may get from some doctors may be hampered if they are not accustomed to working with female patients (Fitzpatrick 2010). Women may require a different approach and different medical treatment than men, and health care providers should be cognizant of the different patients they have to ensure all

patients are getting the appropriate treatment they need. Males and females may also react differently to medications prescribed to them, and women may develop different symptoms of certain medical conditions, at different rates, than men (Fitzpatrick 2010). Because of this, it is extremely important to ensure health care providers are trained better in providing individualized medical care to male and female patients. Even the VA's medical centers have been trying to adapt to the differing needs of female patients, particularly in the gynecological field (Fitzpatrick 2010).

Further Research

Based off the research conducted in support of this thesis, it can be concluded that there is not enough research available which identifies the different impacts of combat deployment on female Soldiers versus male Soldiers and that more research needs to be conducted. "As a new generation of women warriors return from the war, it is critical that mental health providers understand that this cohort's unique war zone experiences and readjustment concerns" (Street, Vogt, and Dutra 2009, 692). Although research on the post-deployment health of OIF and OEF Soldiers has grown in the past several years, research that distinguishes the differences between male and female Soldiers' combat-related health effects is very limited (Vogt et al. 2011). Due to the fact that, on average, much of the research available shows that many of the deployment-related health effects on female and male Soldiers are very similar, it is important for the Department of Defense to conduct more research in order to gain a better understanding of the differences between males and females (Vogt et al. 2011).

Additionally, more research needs to be conducted on the different needs in assessing and treating deployment-related health issues amongst women who have

deployed in support of OIF and OEF (Vogt et al. 2011). In order to better understand many of the behavioral health effects experienced by females who have deployed in support of combat operations, more research is needed to understand the association between substance abuse and mental health issues, as well as relationship of social issues and mental health issues in female Soldiers (Luxton, Skopp, and Maguen 2010). A better understanding of these relationships will help health care providers ensure female Soldiers are receiving appropriate gender-based medical screening and treatment (Luxton, Skopp, and Maguen 2010). This is particularly true for the DoD and the VA as they continue to strengthen their programs to provide better health care for a new generation of veterans, which includes more females than ever before (Maguen et al. 2010). It is also necessary to consider the need to update and change the current PDHRA form to one that it is able to more accurately capture the medical needs of Soldiers who have recently returned from combat deployment. It may even be necessary to consider developing separate forms for males and females.

Although it is not specifically mentioned in the majority of research regarding the different medical and behavioral health effects on women who have served in combat, this research could lead to more opposition to women serving in combat. With the Army's current focus of placing women into combat military occupational specialties, identifying how women experience different medical and behavioral health effects due to combat deployment could support the idea that women do not belong in certain combat roles. This thesis is intended to identify that there are different needs for women who have served in combat in comparison to their male counterparts, but that these concerns

can be addressed and not affect the ability of women serving in combat-related military occupational specialties.

Conclusion

> Significantly more research attention needs to be given to women currently serving in the military and to female Veterans in an effort to better understand their mental health concerns and resources necessary to facilitate functioning. Using both qualitative and quantitative methods is likely to provide stakeholders with the most complete picture (Gutierrez et al. 2013, 933).

The intent of this study was to determine the different medical and behavioral health effects on women who have served in combat, and how these medical and behavioral health effects may differ between female and male Soldiers. Although there is very little research available that focuses specifically on women's health effects, it can be concluded that women do experience some different health effects following combat deployment, and it can also be concluded that women may deal with these health effects differently than men. More research must be conducted in order to better understand the health effects on women who have served in combat, and how to provide better care for women once they return from combat deployment. The goal must be to better understand the differences in health effects on women, and men, in order to provide adequate health care as quickly as possible, so that our Soldiers can return to the force and continue to fight our nation's wars.

APPENDIX A

DD FORM 2726 (POST-DEPLOYMENT HEALTH ASSESSMENT)

This form must be completed electronically. Handwritten forms will not be accepted.

POST DEPLOYMENT HEALTH ASSESSMENT (PDHA)

PRIVACY ACT STATEMENT

This statement serves to inform you of the purpose for collecting personally identifiable information through the DD Form 2796, Post-Deployment Health Assessment (PDHA).

AUTHORITY: 10 U.S.C. 136, Under Secretary of Defense for Personnel and Readiness; 10 U.S.C. 1074f, Medical Tracking System for Members Deployed Overseas; DoDI 1404.10, DoD Civilian Expeditionary Workforce; DoDI 6490.02E, Comprehensive Health Surveillance, and E.O. 9397 (SSN), as amended.

PURPOSE: To obtain information from an individual in order to assess the state of the individual's health after deployment outside the United States, its territories and possessions as part of a contingency, combat, or other operation and to assist health care providers in identifying and providing present and future medical care to the individual. The information provided may result in a referral for additional health care that may include medical, dental, or behavioral health care or diverse community support services.

ROUTINE USES: Your records may be disclosed to other Federal and State agencies and civilian health care providers, as necessary, in order to provide medical care and treatment. Use and disclosure of you records outside of DoD may also occur in accordance with 5 U.S.C. 552a(b) of the Privacy Act of 1974, as amended, which incorporates the DoD "Blanket Routine Uses" published at: http://dpclo.defense.gov/privacy/SORNs/blanket_routine_uses.html. Any protected health information (PHI) in your records may be used and disclosed generally as permitted by the HIPAA Privacy Rule (45 CFR Parts 160 and 164), as implemented within DoD by DoD 6025.18-R. Permitted uses and discloses of PHI include, but are not limited to, treatment, payment, and healthcare operations.

DISCLOSURE: Voluntary. If you chose not to provide information, comprehensive healthcare services may not be possible or administrative delays may occur. HOWEVER, CARE WILL NOT BE DENIED.

INSTRUCTIONS: You are encouraged to answer all questions. You must at least complete the first portion on who you are and when and where you deployed. If you do not understand a question, please discuss the question with a health care provider.

DEMOGRAPHICS

Last Name _____ **First Name** _____ **Middle Initial** ____

Social Security Number _____ **Today's Date** (*dd/mmm/yyyy*) _____

Date of Birth (*dd/mmm/yyyy*) _____ **Gender** O Male O Female

Service Branch
O Air Force
O Army
O Navy
O Marine Corps
O Coast Guard
O Civilian Expeditionary Workforce (CEW)
O USPHS
O Other Defense Agency List: _____

Component
O Active Duty
O National Guard
O Reserves
O Civilian Government Employee

Pay Grade
O E1 O E2 O E3 O E4 O E5 O E6 O E7 O E8 O E9
O O1 O O2 O O3 O O4 O O5 O O6 O O7 O O8 O O9 O O10
O W1 O W2 O W3 O W4 O W5
O Other

Home station/unit: _____

Current contact information:
Phone: _____
Cell: _____
DSN: _____
Email: _____
Address: _____

Point of contact who can always reach you:
Name: _____
Phone: _____
Email: _____
Address: _____

PLEASE ANSWER ALL QUESTIONS BASED ON YOUR MOST RECENT DEPLOYMENT

Date arrived theater (*dd/mmm/yyyy*) _____ **Date departed theater** (*dd/mmm/yyyy*) _____

Location of operation
To what areas were you mainly deployed?
(Please list all that apply, including the number of months spent at each location.)

O Country 1 _____ Time at location (*months*) _____
O Country 2 _____ Time at location (*months*) _____
O Country 3 _____ Time at location (*months*) _____
O Country 4 _____ Time at location (months) _____
O Country 5 _____ Time at location (months) _____

DD FORM 2796, SEP 2012 PREVIOUS EDITION IS OBSOLETE **Page 1 of 10 Pages**

This form must be completed electronically. Handwritten forms will not be accepted.

Deployer's SSN (Last 4 digits): _____

1. **Overall, how would you rate your health during the PAST MONTH?**
   O Excellent O Very Good O Good O Fair O Poor

2. **Compared to before this deployment, how would you rate your health in general now?**
   O Much better now than before I deployed
   O Somewhat better now than before I deployed
   O About the same as before I deployed
   O Somewhat worse now than before I deployed Please explain: _____
   O Much worse now than before I deployed Please explain: _____

3. **How often did you smoke tobacco (for example cigarettes, cigars, pipe, or hookah) during your deployment?**
   O Just about every day O Some days O Not at all

4. **Were you wounded, injured, assaulted or otherwise hurt during your deployment?** O Yes O No

   If yes, are you still having any problems or concerns related to this event? O Yes O No

   If yes, please explain: _____

5. **During your deployment:**
   a. Did you ever feel like you were in great danger of being killed? O Yes O No
   b. Did you encounter dead bodies or see people killed or wounded during this deployment? O Yes O No
   c. Did you engage in direct combat where you discharged a weapon? O Yes O No

6. **How many times during your deployment did you visit a health care provider for a medical or dental health problem/concern?**
   O No visits O 1 visit O 2-3 visits O 4-5 visits O 6 or more

7. **During this deployment did you receive care for combat stress or a mental health problem/concern?** O Yes O No

   If yes, please explain: _____

8. **During this deployment, did you have to spend one or more nights in a hospital as a patient?** O Yes O No

   Reason/dates: _____

9. **During the PAST MONTH, how difficult have physical health problems *(illness or injury)* made it for you to do your work or other regular daily activities?**
   O Not difficult at all O Somewhat difficult O Very difficult O Extremely difficult

10.a. **During this deployment, did any of the following events happen to you?** (Mark all that apply)
   (1) Blast or explosion (e.g., IED, RPG, EFP, land mine, grenade, etc.)? O Yes O No
   If yes, please estimate your distance from the closest blast or explosion:
   O Less than 25 meters (82 feet)
   O 25-50 meters (82-164 feet)
   O 50-100 meters (164-328 feet)
   O More than 100 meters (328 feet)
   (2) Vehicular accident/crash (any vehicle including aircraft)? O Yes O No
   (3) Fragment wound or bullet wound?
   a. Head or neck O Yes O No
   b. Rest of body O Yes O No
   (4) Other injury (e.g., sports injury, accidental fall, etc.)? O Yes O No

   If yes to any of the above, please explain: _____

10.b. **As a result of any of the events in 10.a., did you receive a jolt or blow to your head that IMMEDIATELY resulted in:**
   (1) Losing consciousness ("knocked out")? O Yes O No
   If yes, for about how long were you knocked out?
   O Less than 5 min O 5-30 min O more than 30 min
   (2) Losing memory of events before or after the injury? O Yes O No
   (3) Seeing stars, becoming disoriented, functioning differently, or nearly blacking out? O Yes O No

10.c. **How many total times during this deployment did you receive a blow or jolt to your head?**
   (only answer if you had a yes to any of the questions on 10a.)
   O 0 O 1 O 2 O 3 O more than 3 (list number of times) _____

This form must be completed electronically. Handwritten forms will not be accepted.

Deployer's SSN (Last 4 digits): _____

11. During the PAST MONTH, how much have you been bothered by any of the following problems?

Symptom	Not bothered at all	Bothered a little	Bothered a lot
a. Stomach pain	O	O	O
b. Back pain	O	O	O
c. Pain in the arms, legs, or joints (knees, hips, etc.)	O	O	O
d. Menstrual cramps or other problems with your periods (Women only)	O	O	O
e. Headaches	O	O	O
f. Chest pain	O	O	O
g. Dizziness	O	O	O
h. Fainting spells	O	O	O
i. Feeling your heart pound or race	O	O	O
j. Shortness of breath	O	O	O
k. Pain or problems during sexual intercourse	O	O	O
l. Constipation, loose bowels, or diarrhea	O	O	O
m. Nausea, gas, or indigestion	O	O	O
n. Feeling tired or having low energy	O	O	O
o. Trouble sleeping	O	O	O
p. Trouble concentrating on things (such as reading a newspaper or watching television)	O	O	O
q. Memory problems	O	O	O
r. Balance problems	O	O	O
s. Noises in your head or ears (such as ringing, buzzing, crickets, humming, tone, etc.)	O	O	O
t. Trouble hearing	O	O	O
u. Sensitivity to bright light	O	O	O
v. Becoming easily annoyed or irritable	O	O	O
w. Fever	O	O	O
x. Cough lasting more than 3 weeks	O	O	O
y. Numbness or tingling in the hands or feet	O	O	O
z. Hard to make up your mind or make decisions	O	O	O
aa. Watery, red eyes	O	O	O
bb. Dimming of vision, like the lights were going out	O	O	O
cc. Skin rash and/or lesion	O	O	O
dd. Pain with urination, frequency of urination, or strong urge to urinate	O	O	O
ee. Bleeding gums, tooth pain, or broken tooth	O	O	O

12. a. Over the PAST MONTH, what major life stressors have you experienced that are a cause of significant concern or make it difficult for you to do your work, take care of things at home, or get along with other people (for example, serious conflicts with others, relationship problems, or a legal, disciplinary or financial problem)?

O None or
O Please list and explain: _____

_____

_____

b. Are you currently in treatment or getting professional help for this concern? O Yes O No

13. What prescription or over-the-counter medications (including herbals/supplements) for sleep, pain, combat stress, or a mental health problem are you CURRENTLY taking?

O Please list: _____

_____

O None

14. a. How often do you have a drink containing alcohol?
O Never O Monthly or less O 2-4 times a month O 2-3 times per week O 4 or more times a week

b. How many drinks containing alcohol do you have on a typical day when you are drinking?
O 1 or 2 O 3 or 4 O 5 or 6 O 7 to 9 O 10 or more

c. How often do you have six or more drinks on one occasion?
O Never O Less than monthly O Monthly O Weekly O Daily or almost daily

15. Have you ever had any experience that was so frightening, horrible, or upsetting that, in the PAST MONTH, you:

a. Have had nightmares about it or thought about it when you did not want to?	O Yes	O No
b. Tried hard not to think about it or went out of your way to avoid situations that remind you of it?	O Yes	O No
c. Were constantly on guard, watchful or easily startled?	O Yes	O No
d. Felt numb or detached from others, activities, or your surroundings?	O Yes	O No

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Deployer's SSN (Last 4 digits): _____

16. **Over the LAST 2 WEEKS, how often have you been bothered by the following problems?**

	Not at all	Few or several days	More than half the days	Nearly every day
a. Little interest or pleasure in doing things	O	O	O	O
b. Feeling down, depressed, or hopeless	O	O	O	O

17. **Are you worried about your health because you believe you were exposed to something in the environment while deployed?** O Yes O No

If yes, please explain: _____

18. **Do you think you were exposed to any chemical, biological, or radiological warfare agents during this deployment?** O Yes O No

If yes, please explain: _____

19. **Were you in a vehicle hit by a depleted uranium (DU) round; inside a destroyed vehicle that contained DU; or closely inspect such a vehicle?** O Yes O No O Don't know

If yes, please explain: _____

20. **Were you told to take medicines to prevent malaria?** O Yes O No

If yes, please indicate which medicines you took and whether you took all pills as directed. (Mark all that apply)

Anti-malarial medications received	Took all pills?
O Chloroquine (Aralen®)	O Yes O No
O Doxycycline (Vibramycin®)	O Yes O No
O Malarone®	O Yes O No
O Mefloquine (Lariam®)	O Yes O No
O Primaquine	O Yes O No
O Other: _____	O Yes O No
O Given pills but do not know drug name	O Yes O No

21. **Were you bitten or scratched by an animal during your deployment?** O Yes O No

If yes, please explain what kind of animal was involved, your injury, and what happened:

_____

_____

22. **Would you like to schedule an appointment with a health care provider to discuss any health concern(s)?** O Yes O No

23. **Are you interested in receiving information or assistance for a stress, emotional or alcohol concern?** O Yes O No

24. **Are you interested in receiving assistance for a family or relationship concern?** O Yes O No

25. **Would you like to schedule a visit with a chaplain or a community support counselor?** O Yes O No

This form must be completed electronically. Handwritten forms will not be accepted.

Deployer's SSN (Last 4 digits): _____

Health Care Provider Only – Provider Review, Interview, Assessment, and Recommendations:

Deployer reports arriving in theater on: _____ Deployer reports departing theater on: _____

1. **Address concerns identified on deployer questions 1 and 2.**

Deployer question	Not answered	Deployer indicated concern	Deployer's response or concern	Provider comments (if indicated)
Self health rating	O	O		
Change in health post-deployment	O	O		

2. **Address wounds, injuries, assaults, etc., occurring during deployment as reported on deployer question 4.**

a. Did deployer mark that he/she is still having a problem or concern related to a wound, injury, or assault that occurred during their deployment?
- O Yes
- O No (*go to block 3)*
- O Not answered by deployer

b. Refer for evaluation?
- O Yes (complete blocks 19 and 20)
- O No
  - O *Already under care*
  - O *Already has referral*
  - O *No significant impairment*
  - O *Other reason (explain):* _____

3. **Deployment experiences as reported in deployer question 5. Consider in overall assessment; ask follow-up questions as indicated.**

Deployer question	Not answered	Yes response	Provider comments (if indicated)
Danger of being killed	O	O	
Encountered bodies or saw people killed or wounded	O	O	
In direct combat and discharged weapon	O	O	

4. **Address concerns identified on deployer questions 6 through 19.**

Deployer question	Not answered	Deployer indicated concern	Deployer's response or concern	Provider comments (if indicated)
Health care visits during deployment	O	O		
Care for combat stress/mental health	O	O		
Hospitalized during deployment	O	O		
Physical limitations/problems	O	O		

5. **Deployment injury and concussion risk assessment.**

a. Did deployer have an injury based on their responses to question 10.a.?
- O Yes
- O No (*go to block 6)*

b. Did deployer have a possible concussion based on their responses to questions 10.a. through 10.c.?
- O Yes
- O No (*go to block 6)*

c. Evaluate injury history and concussion-related experiences and symptoms.

Refer for evaluation?
- O Yes (complete blocks 19 and 20)
- O No
  - O *Already under care*
  - O *Already has referral*
  - O *No significant impairment*
  - O *Other reason (explain):* _____

This form must be completed electronically. Handwritten forms will not be accepted.

Deployer's SSN (Last 4 digits): _____

6. **Post-deployment general symptoms/health concerns.**

List of symptoms reported as "Bothered a Lot" on Deployer Questions 11a. through 11ee.

List of symptoms reported as "Bothered a Little" on Deployer Questions 11a. through 11ee.

Physical symptom (PHQ-15) severity score for Deployer Questions 11a. through 11o.				
	Minimal < 4	Low 5 - 9	Medium 10 - 14	High ≥ 15
Deployer's total	_____	_____	_____	_____

a. Does deployer have evidence of high generalized post-deployment physical symptoms (a score of ≥ 15 on the PHQ-15 physical symptoms scale - deployer questions 11a. - 11o.) or is "bothered a lot" by specific symptoms listed in 11a. – 11ee.?
- O Yes
- O No
- O Not answered by deployer

b. Based on deployer's responses to deployer questions 11a. through 11ee. is a referral indicated?
- O Yes (complete blocks 19 and 20)
- O No
  - O *Already under care*
  - O *Already has referral*
  - O *No significant impairment*
  - O *Other reason (explain):* _____

7. **Major life stressor as reported on deployer question 12.**

a. Did deployer mark they have a concern or a difficulty with a major life stressor?
- O Yes Deployer's concern: _____
- O No (*go to block 8)*
- O Not answered by deployer

b. If yes, ask additional questions to determine level of problem: _____

c. Consider need for referral. Referral indicated?
- O Yes (complete blocks 19 and 20)
- O No
  - O *Already under care*
  - O *Already has referral*
  - O *No significant impairment*
  - O Other *reason (explain):* _____

8. **Self-reported history of prescription or over-the-counter medications as described on deployer question 13.**

Deployer question	Not answered	Yes response	Deployer's response	Provider comments (if indicated)
Medications	O	O		

This form must be completed electronically. Handwritten forms will not be accepted.

Deployer's SSN (Last 4 digits): _____

9. Alcohol use as reported in deployer question 14.

a. Deployer's AUDIT-C screening score was _____. *(If score between 0-4 (men) or 0-3 (women) nothing required, go to block 10).* O Not answered

Number of drinks per week: _____ Maximum number of drinks per occasion: _____

Based on the AUDIT-C score and assessment of alcohol use, follow the guidance below:

Alcohol Use Intervention Matrix		
Assess Alcohol Use	**AUDIT-C Score Men 5 - 7 Women 4 - 7**	**AUDIT-C Score Men and Women ≥ 8**
Alcohol use WITHIN recommended limits: Men: ≤ 14 drinks per week **OR** ≤ 4 drinks on any occasion Women: ≤ 7 drinks per week **OR** ≤ 3 drinks on any occasion	Advise patient to stay below recommended limits	Refer if indicated for further evaluation AND conduct BRIEF counseling*
Alcohol use EXCEEDS recommended limits: Men: > 14 drinks per week or > 4 drinks on any occasion Women: > 7 drinks per week or > 3 drinks on any occasion	Conduct BRIEF counseling* AND consider referral for further evaluation	

* **BRIEF** counseling: **B**ring attention to elevated level of drinking; **R**ecommend limiting use or abstaining; **I**nform about the effects of alcohol on health; **E**xplore and help/support in choosing a drinking goal; **F**ollow-up referral for specialty treatment, if indicated.

b. Referral indicated for evaluation?
O Yes (complete blocks 19 and 20)
O No Provide education/awareness as needed.
State reason if AUDIT-C score was 8+:
O *Already under care*
O *Already has referral*
O *No significant impairment*
O *Other reason (explain):* _____

10. PTSD screening as reported in deployer question 15.

a. Are two or more of the deployer's responses to questions 15a. through 15d. "yes?"
O Yes
O No *(go to block 11)*
O Not answered by deployer

b. If yes, ask additional questions to determine extent of problem: _____

c. Consider need for referral. Referral indicated?
O Yes (complete blocks 19 and 20)
O No
O *Already under care*
O *Already has referral*
O *No significant impairment*
O **Other** *reason (explain):* _____

11. Depression screening as reported in deployer question 16.

a. Did deployer mark "more than half the days" or "nearly every day" on question 16a. or 16b.?
O Yes
O No *(go to block 12)*
O Not answered by deployer

b. If yes, ask additional questions to determine extent of problem; briefly describe results: _____

c. Consider need for referral. Referral indicated?
O Yes (complete blocks 19 and 20)
O No
O *Already under care*
O *Already has referral*
O *No significant impairment*
O **Other** *reason (explain):* _____

This form must be completed electronically. Handwritten forms will not be accepted.

Deployer's SSN (Last 4 digits): _____

12. Environmental and exposure concern/assessment as reported in deployer questions 17 and 18.

a. Did deployer indicate a worry or possible exposure? O Yes O No (go to block 13)

If yes, mark deployer's exposure concern(s)	
O Animal bites	O Paints
O Animal bodies (dead)	O Pesticides
O Chlorine gas	O Radar/Microwaves
O Depleted uranium	O Sand/dust
O Excessive vibration	O Smoke from burning trash or feces
O Fog oils (smoke screen)	O Smoke from oil fire
O Garbage	O Solvents
O Human blood, body fluids, body parts, or dead bodies	O Tent heater smoke
O Industrial pollution	O Vehicle or truck exhaust fumes
O Insect bites	O Chemical, biological, radiological warfare agent
O Ionizing radiation	O Other exposures to toxic chemicals or materials, such as ammonia, nitric acid, etc. Please list:
O JP8 or other fuels	
O Lasers	
O Loud noises	

b. If yes, referral indicated?
O Yes (complete blocks 19 and 20)
O No (provide risk education)
O *Already under care*
O *Already has referral*
O *No significant impairment*
O *Other reason (explain):* _____

13. Depleted uranium (DU) as reported in deployer question 19.

a. Did deployer mark either "yes" or "don't know to questions [illegible]
O Yes
O No *(go to block 14)*

b. If yes, based on details of event and extent of exposure is referral to PCM for completion of DD Form 2872 (DU Questionnaire) and possible 24-hour urinalysis indicated?
O Yes (complete blocks 19 and 20)
O No (provide risk education)
O *Already under care*
O *Already has referral*
O *No significant impairment*
O Other *reason (explain):* _____

14. Malaria prophylaxis review as reported in deployer question 20.

Deployer reports having deployed to: _____

a. Deployment location required malaria prophylaxis? O Yes O No *(go to block 15)*

b. Did deployer receive anti-malarial prophylaxis AND report compliance? O Yes *(go to block 15)* O No

c. If no, determine need for prophylaxis. Prescription indicated?
O Yes (complete blocks 19 and 20)
O No (briefly state reason): _____

15. Animal bite (rabies risk) as reported on deployer question 21.

a. Did deployer mark "yes" on animal bite/scratch?
O Yes
O No *(go to block 16)*

b. If yes, based on details of event and care received is a referral and/or follow-up indicated?
Note: Rabies incubation period can be months to years. Rabies prophylaxis can begin at anytime.
O Yes (complete blocks 19 and 20)
O No (provide risk education)
O *Was appropriately treated*
O *Already under care*
O *Already has referral*
O *Situation was not a risk for rabies*
O Other *reason (explain):* _____

This form must be completed electronically. Handwritten forms will not be accepted.

Deployer's SSN (Last 4 digits): _____

16. Suicide risk evaluation.

a. **Ask** "Over the **PAST MONTH**, have you been bothered by thoughts that you would be better off dead or of hurting yourself in some way?"
- O Yes
- O No (go to block 17)

b. If 16.a. was yes, **ask:** "How often have you been bothered by these thoughts?"
- O Few or several days
- O More than half of the time
- O Nearly every day

c. If 16.a. was yes, **ask:** "Have you had thoughts of actually hurting yourself?"
- O Yes **(If yes, ask questions 16d. through 16g.)**
- O No (If no thoughts of self-harm, go to block 17)

d. **Ask** "Have you thought about how you might actually hurt yourself?"
- O Yes How? _____
- O No

e. **Ask** "There's a big difference between having a thought and acting on a thought. How likely do you think it is that you will act on these thoughts about hurting yourself or ending your life over the next month?"
- O Not at all likely
- O Somewhat likely
- O Very likely

f. **Ask** "Is there anything that would prevent or keep you from harming yourself?"
- O Yes What? _____
- O No

g. **Ask** "Have you ever attempted to harm yourself in the past?"
- O Yes How? _____
- O No

h. **Conduct further risk assessment** (e.g., interpersonal conflicts, social isolation, alcohol/substance abuse, hopelessness, severe agitation/anxiety, diagnosis of depression or other psychiatric disorder, recent loss, financial stress, legal disciplinary problems, or serious physical illness)

Comments: _____

i. Does deployer pose a current risk for harm to self?
- O Yes (complete blocks 19 and 20)
- O No

17. Violence/harm risk evaluation.

a. **Ask,** "Over the past month have you had thoughts or concerns that you might hurt or lose control with someone?"
- O Yes
- O No *(go to block 18)*

If yes, **ask** additional questions to determine extent of problem (target, plan, intent, past history) Comments: _____

b. Does member pose a current risk to others?
- O Yes (complete blocks 19 and 20)
- O No (briefly state reason): _____

This form must be completed electronically. Handwritten forms will not be accepted.

Deployer's SSN (Last 4 digits): _____

18. Deployer issues with this assessment (mark as appropriate):
O Deployer declined to complete form
O Deployer declined to complete interview/assessment

Assessment and Referral: After review of deployer's responses and interview with the deployer, the assessment and need for further evaluation is indicated in blocks 19 through 22.

19. Summary of provider's identified concerns needing referral <Mark all that apply>	Yes	No
a. None Identified O		
b. Physical health	O	O
c. Dental health	O	O
d. Concussion	O	O
e. Mental health symptoms	O	O
f. Alcohol use	O	O
g. PTSD symptoms	O	O
h. Depression symptoms	O	O
i. Environment/work exposure	O	O
j. Depleted uranium	O	O
k. Malaria prophylaxis	O	O
l. Risk of self-harm	O	O
m. Risk of violence	O	O
n. Other, list:	O	O

20. Recommended referral(s) <Mark all that apply even if deployer does not desire>	Within 24 hours	Within 7 days	Within 30 days
a. Primary Care, Family Practice, Internal Medicine	O	O	O
b. Behavioral Health in Primary Care	O	O	O
c. Mental Health Specialty Care	O	O	O
d. Dental	O	O	O
e. Other specialty care:	O	O	O
Audiology	O	O	O
Dermatology	O	O	O
OB/GYN	O	O	O
Physical Therapy	O	O	O
TBI/Rehab Med	O	O	O
Podiatry	O	O	O
Other, list	O	O	O
f. Case Manager / Care Manager	O	O	O
g. Substance Abuse Program	O	O	O
h. Immunization clinic	O	O	O
i. Laboratory	O	O	O
j. Other, list:	O	O	O

21. Comments: _____
_____
_____
_____

22. Address requests as reported on deployer questions 22 through 25.

Deployer question	Not answered	Yes response	Comments (if indicated)
Request medical appointment	O	O	
Request info on stress/emotional/alcohol	O	O	
Family/relationship concern assistance	O	O	
Chaplain/counselor visit request	O	O	

23. Supplemental services recommended / information provided	
O Appointment Assistance	O Family Support
O Information on post-deployment blood specimen requirement	O Military One Source
O Contract Support: _____	O TRICARE Provider
O Community Service: _____	O VA Medical Center or Community Clinic
O Chaplain	O Vet Center
O Health Education and Information	O Other, list:
O Health Care Benefits and Resources Information	
O In Transition	

Provider's Name: _____ Date (*dd/mmm/yyyy*) _____

Title: O MD or DO O PA O Nurse Practitioner O Adv Practice Nurse O IDMT O IDC O IDHS

I certify that this review process has been completed. **This visit is coded by V70.5 _ E**

APPENDIX B

DD FORM 2900 (POST-DEPLOYMENT HEALTH REASSESSMENT)

This form must be completed electronically. Handwritten forms will not be accepted.

POST DEPLOYMENT HEALTH RE-ASSESSMENT (PDHRA)

PRIVACY ACT STATEMENT

This statement serves to inform you of the purpose for collecting personally identifiable information through the DD Form 2900, Post-Deployment Health Re-Assessment (PDHRA).

AUTHORITY: 10 U.S.C. 136, Under Secretary of Defense for Personnel and Readiness; 10 U.S.C. 1074f, Medical Tracking System for Members Deployed Overseas; DoDI 1404.10, DoD Civilian Expeditionary Workforce; DoDI 6490.02E, Comprehensive Health Surveillance, and E.O. 9397 (SSN), as amended.

PURPOSE: To obtain information from an individual in order to assess the state of the individual's health after deployment outside the United States, its territories and possessions as part of a contingency, combat, or other operation and to assist health care providers in identifying and providing present and future medical care to the individual. The information provided may result in a referral for additional health care that may include medical, dental, or behavioral health care or diverse community support services.

ROUTINE USES: Your records may be disclosed to other Federal and State agencies and civilian health care providers, as necessary, in order to provide medical care and treatment. Use and disclosure of you records outside of DoD may also occur in accordance with 5 U.S.C. 552a(b) of the Privacy Act of 1974, as amended, which incorporates the DoD "Blanket Routine Uses" published at: http://dpclo.defense.gov/privacy/SORNs/blanket_routine_uses.html. Any protected health information (PHI) in your records may be used and disclosed generally as permitted by the HIPAA Privacy Rule (45 CFR Parts 160 and 164), as implemented within DoD by DoD 6025.18-R. Permitted uses and discloses of PHI include, but are not limited to, treatment, payment, and healthcare operations.

DISCLOSURE: Voluntary. If you chose not to provide information, comprehensive healthcare services may not be possible or administrative delays may occur. HOWEVER, CARE WILL NOT BE DENIED.

INSTRUCTIONS: You are encouraged to answer all questions. You must at least complete the first portion on who you are and when and where you deployed. If you do not understand a question, please discuss the question with a health care provider.

DEMOGRAPHICS

Last Name _____ **First Name** _____ **Middle Initial** ____

Social Security Number _____ **Today's Date** *(dd/mmm/yyyy)* _____

Date of Birth *(dd/mmm/yyyy)* _____ **Gender** O Male O Female

Service Branch
O Air Force
O Army
O Navy
O Marine Corps
O Coast Guard
O Civilian Expeditionary Workforce (CEW)
O USPHS
O Other Defense Agency List: _____

Component
O Active Duty
O National Guard
O Reserves
O Civilian Government Employee

Pay Grade
O E1 O O1 O W1
O E2 O O2 O W2
O E3 O O3 O W3
O E4 O O4 O W4
O E5 O O5 O W5
O E6 O O6
O E7 O O7 O Other
O E8 O O8
O E9 O O9
O O10

Home station/unit: _____

Current contact information:
Phone: _____
Cell: _____
DSN: _____
Email: _____
Address: _____

Point of contact who can always reach you:
Name: _____
Phone: _____
Email: _____
Address: _____

PLEASE ANSWER ALL QUESTIONS BASED ON YOUR MOST RECENT DEPLOYMENT

Primary location of last deployment: _____ **Date departed theater** *(dd/mmm/yyyy)* _____

Total deployments in past 5 years: O 1 O 2 O 3 O 4 O 5 or more

This form must be completed electronically. Handwritten forms will not be accepted.

Deployer's SSN (Last 4 digits): _____

1. **Overall, how would you rate your health during the PAST MONTH?**
   O Excellent O Very Good O Good O Fair O Poor

2. **Compared to before your most recent deployment, how would you rate your health in general now?**
   O Much better now than before I deployed
   O Somewhat better now than before I deployed
   O About the same as before I deployed
   O Somewhat worse now than before I deployed Please explain: _____
   O Much worse now than before I deployed Please explain: _____

3. **Were you wounded, injured, assaulted or otherwise hurt during your deployment?** O Yes O No

   If yes, are you still having any problems or concerns related to the event(s)? O Yes O No

   If yes, please explain: _____

4. **During your deployment:**
   a. Did you ever feel like you were in great danger of being killed? O Yes O No
   b. Did you encounter dead bodies or see people killed or wounded during this deployment? O Yes O No
   c. Did you engage in direct combat where you discharged a weapon? O Yes O No

5. **Since you returned from deployment, how many times have you gone to a health care provider for a medical, dental, or mental health problem/concern?**
   O No visits O 1 visit O 2-3 visits O 4-5 visits O 6 or more

6. **Since you returned from deployment, have you been hospitalized?** O Yes O No

   If yes, please list date and brief details: _____

7. **During the PAST MONTH, how difficult have physical health problems *(illness or injury)* made it for you to do your work or other regular daily activities?**
   O Not difficult at all O Somewhat difficult O Very difficult O Extremely difficult

8. **During the PAST MONTH, how much have you been bothered by any of the following problems?**

Symptom	Not bothered at all	Bothered a little	Bothered a lot
a. Stomach pain	O	O	O
b. Back pain	O	O	O
c. Pain in the arms, legs, or joints (knees, hips, etc.)	O	O	O
d. Menstrual cramps or other problems with your periods (Women only)	O	O	O
e. Headaches	O	O	O
f. Chest pain	O	O	O
g. Dizziness	O	O	O
h. Fainting spells	O	O	O
i. Feeling your heart pound or race	O	O	O
j. Shortness of breath	O	O	O
k. Pain or problems during sexual intercourse	O	O	O
l. Constipation, loose bowels, or diarrhea	O	O	O
m. Nausea, gas, or indigestion	O	O	O
n. Feeling tired or having low energy	O	O	O
o. Trouble sleeping	O	O	O
p. Trouble concentrating on things (such as reading a newspaper or watching television)	O	O	O
q. Memory problems	O	O	O
r. Balance problems	O	O	O
s. Noises in your head or ears (such as ringing, buzzing, crickets, humming, tone, etc.)	O	O	O
t. Trouble hearing	O	O	O
u. Sensitivity to bright light	O	O	O
v. Becoming easily annoyed or irritable	O	O	O
w. Fever	O	O	O
x. Cough lasting more than 3 weeks	O	O	O
y. Numbness or tingling in the hands or feet	O	O	O
z. Hard to make up your mind or make decisions	O	O	O
aa. Watery, red eyes	O	O	O
bb. Dimming of vision, like the lights were going out	O	O	O
cc. Skin rash and/or lesion	O	O	O
dd. Bleeding gums, tooth pain, or broken tooth	O	O	O

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Deployer's SSN (Last 4 digits): _____

9. a. **Over the PAST MONTH, what major life stressors have you experienced that are a cause of significant concern or make it difficult for you to do your work, take care of things at home, or get along with other people (for example, serious conflicts with others, relationship problems, or a legal, disciplinary or financial problem)?**
   O None or
   O Please list and explain: _____
   _____
   _____

   b. **Are you currently in treatment or getting professional help for this concern?** O Yes O No

10. **In the PAST YEAR did you receive care for any mental health condition or concern such as, but not limited to post traumatic stress disorder (PTSD), depression, anxiety disorder, alcohol abuse or substance abuse?** O Yes O No

    If yes, please explain: _____

11. **What prescription or over-the-counter medications (including herbals/supplements) for sleep, pain, combat stress, or a mental health problem are you CURRENTLY taking?**
    O Please list: _____
    _____
    O None

12. a. **How often do you have a drink containing alcohol?**
    O Never O Monthly or less O 2-4 times a month O 2-3 times per week O 4 or more times a week

    b. **How many drinks containing alcohol do you have on a typical day when you are drinking?**
    O 1 or 2 O 3 or 4 O 5 or 6 O 7 to 9 O 10 or more

    c. **How often do you have six or more drinks on one occasion?**
    O Never O Less than monthly O Monthly O Weekly O Daily or almost daily

13. **Have you ever had any experience that was so frightening, horrible, or upsetting that, in the PAST MONTH, you:**
    a. Have had nightmares about it or thought about it when you did not want to? O Yes O No
    b. Tried hard not to think about it or went out of your way to avoid situations that remind you of it? O Yes O No
    c. Were constantly on guard, watchful or easily startled? O Yes O No
    d. Felt numb or detached from others, activities, or your surroundings? O Yes O No

NOTE: If two or more items on 13a. through 13d. are marked yes, continue to answer items 13e through 13v.

Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each question carefully and check the box for how much you have been bothered by that problem in the LAST MONTH. Please answer all items.

	Not at all	A little bit	Moderately	Quite a bit	Extremely
13e. Repeated, disturbing memories, thoughts, or images of a stressful experience from the past?	O	O	O	O	O
13f. Repeated, disturbing dreams of a stressful experience from the past?	O	O	O	O	O
13g. Suddenly acting or feeling as if a stressful experience were happening again (as if you were reliving it)?	O	O	O	O	O
13h. Feeling very upset when something reminded you of a stressful experience from the past?	O	O	O	O	O
13i. Having physical reactions (e.g., heart pounding, trouble breathing, or sweating) when something reminded you of a stressful experience from the past?	O	O	O	O	O
13j. Avoid thinking about or talking about a stressful experience from the past or avoid having feelings related to it?	O	O	O	O	O
13k. Avoid activities or situations because they remind you of a stressful experience from the past?	O	O	O	O	O
13l. Trouble remembering important parts of a stressful experience from the past?	O	O	O	O	O
13m. Loss of interest in things that you used to enjoy?	O	O	O	O	O
13n. Feeling distant or cut off from other people?	O	O	O	O	O
13o. Feeling emotionally numb or being unable to have loving feelings for those close to you?	O	O	O	O	O
13p. Feeling as if your future will somehow be cut short?	O	O	O	O	O
13q. Trouble falling or staying asleep?	O	O	O	O	O
13r. Feeling irritable or having angry outbursts?	O	O	O	O	O
13s. Having difficulty concentrating?	O	O	O	O	O
13t. Being "super alert" or watchful, on guard?	O	O	O	O	O
13u. Feeling jumpy or easily startled?	O	O	O	O	O

	Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
13v. How difficult have these problems (13e through 13u.) made it for you to do your work, take care of things at home, or get along with other people?	O	O	O	O

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Deployer's SSN (Last 4 digits): _____

14. Over the LAST 2 WEEKS, how often have you been bothered by the following problems?

	Not at all	Few or several days	More than half the days	Nearly every day
a. Little interest or pleasure in doing things	O	O	O	O
b. Feeling down, depressed, or hopeless	O	O	O	O

NOTE: If 14a. or 14b. are marked "More than half the days" or "Nearly every day," continue to answer items 14c. through 14i.

Over the LAST 2 WEEKS, how often have you been bothered by any of the following problems?	Not at all	Few or several days	More than half the days	Nearly every day
14c. Trouble falling/staying asleep, sleep too much.	O	O	O	O
14d. Feeling tired or having little energy.	O	O	O	O
14e. Poor appetite or overeating.	O	O	O	O
14f. Feeling bad about yourself – or that you are a failure or have let yourself or your family down.	O	O	O	O
14g. Trouble concentrating on things, such as reading the newspaper or watching television.	O	O	O	O
14h. Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety that you have been moving around a lot more than usual.	O	O	O	O

	Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
14i. How difficult have these problems (14a.-14h.) made it for you to do your work, take care of things at home, or get along with other people?	O	O	O	O

15. Are you worried about your health because you believe you were exposed to something in the environment while deployed? O Yes O No

If yes, please explain: _____

16. Were you bitten or scratched by an animal during your deployment? O Yes O No

If yes, please explain what kind of animal was involved, your injury, and what happened:

_____

_____

17. Would you like to schedule an appointment with a health care provider to discuss any health concern(s)? O Yes O No

18. Are you interested in receiving information or assistance for a stress, emotional or alcohol concern? O Yes O No

19. Are you interested in receiving assistance for a family or relationship concern? O Yes O No

20. Would you like to schedule a visit with a chaplain or a community support counselor? O Yes O No

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Deployer's SSN (Last 4 digits): _____

Health Care Provider Only – Provider Review, Interview, Assessment, and Recommendations:

Deployer reports most recent deployment was to _____ and has deployed _____ times before in the past five years.

1. **Address concerns identified on deployer questions 1 and 2.**

Deployer question	Not answered	Deployer indicated concern	Deployer's response or concern	Provider comments (if indicated)
Self health rating	O	O		
Change in health post-deployment	O	O		

2. **Address wounds, injuries, assaults, etc., occurring during deployment as reported on deployer question 3.**

   a. Did deployer mark that he/she is still having a problem or concern related to a wound, injury, or assault that occurred during their deployment?
   - O Yes
   - O No (*go to block 3)*
   - O Not answered by deployer

   b. Refer for evaluation?
   - O Yes (complete blocks 16 and 17)
   - O No
     - O *Already under care*
     - O *Already has referral*
     - O *No significant impairment*
     - O *Other reason (explain):* _____

3. **Deployment experiences as reported in deployer question 4. Consider in overall assessment; ask follow-up questions as indicated.**

Deployer question	Not answered	Yes response	Provider comments (if indicated)
Danger of being killed	O	O	
Encountered bodies or saw people killed or wounded	O	O	
In direct combat and discharged weapon	O	O	

4. **Address concerns identified on deployer questions 5 through 7.**

Deployer question	Not answered	Deployer indicated concern	Deployer's response or concern	Provider comments (if indicated)
Health care visits since return	O	O		
Hospitalized since return	O	O		
Physical limitations/problems	O	O		

5. **Post-deployment general symptoms/health concerns.**

List of symptoms reported as "Bothered a Lot" on Deployer Questions 8a. through 8dd.
List of symptoms reported as "Bothered a Little" on Deployer Questions 8a. through 8dd.

Physical symptom (PHQ-15) severity score for Deployer Questions 8a. through 8o.				
	Minimal < 4	Low 5 - 9	Medium 10 - 14	High ≥ 15
Deployer's total	_____	_____	_____	_____

   a. Does deployer have evidence of high generalized post- deployment physical symptoms (a score of ≥ 15 on the PHQ-15 physical symptom scale – deployer questions 8a. through 8o.) or is "bothered a lot" by specific symptoms listed in 8a. through 8dd.?
   - O Yes
   - O No
   - O Not answered by deployer

   b. Based on deployer's responses to deployer questions 8a. through 8dd. is a referral indicated?
   - O Yes (complete blocks 16 and 17)
   - O No
     - O *Already under care*
     - O *Already has referral*
     - O *No significant impairment*
     - O *Other reason (explain):* _____

This form must be completed electronically. Handwritten forms will not be accepted.

Deployer's SSN (Last 4 digits): _____

6. Major life stressor as reported on deployer question 9.

a. Did deployer mark they have a concern or a difficulty with a major life stressor?
- O Yes Deployer's concern: _____
- O No (*go to block 7*)
- O Not answered by deployer

b. If yes, **ask** additional questions to determine level of problem: _____

c. Consider need for referral. Referral indicated?
- O Yes (complete blocks 16 and 17)
- O No
  - O *Already under care*
  - O *Already has referral*
  - O *No significant impairment*
  - O *Other reason (explain)* _____

7. Address concerns as reported in deployer questions 10 and 11.

Deployer question	Not answered	Yes response	Deployer's response	Provider comments (if indicated)
History of mental health care	O	O		
Medications	O	O		

8. Alcohol use as reported in deployer question 12.

a. Deployer's AUDIT-C screening score was _____. *(If score between 0-4 (men) or 0-3 (women) nothing required, go to block 9).* O Not answered by deployer

Number of drinks per week: _____ Maximum number of drinks per occasion: _____

Based on the AUDIT-C score and assessment of alcohol use, follow the guidance below:

Alcohol Use Intervention Matrix		
Assess Alcohol Use	**AUDIT-C Score Men 5-7 Women 4-7**	**AUDIT-C Score Men and Women ≥ 8**
Alcohol use WITHIN recommended limits: Men: ≤ 14 drinks per week **OR** ≤ 4 drinks on any occasion Women: ≤ 7 drinks per week **OR** ≤ 3 drinks on any occasion	Advise patient to stay below recommended limits	Refer if indicated for further evaluation AND conduct BRIEF counseling*
Alcohol use EXCEEDS recommended limits: Men: > 14 drinks per week or > 4 drinks on any occasion Women: > 7 drinks per week or > 3 drinks on any occasion	Conduct BRIEF counseling* AND consider referral for further evaluation	

* **BRIEF** counseling: **B**ring attention to elevated level of drinking; **R**ecommend limiting use or abstaining; **I**nform about the effects of alcohol on health; **E**xplore and help/support in choosing a drinking goal; **F**ollow-up referral for specialty treatment, if indicated.

b. Referral indicated for evaluation?
- O Yes (complete blocks 16 and 17)
- O No Provide education/awareness as needed. State reason if AUDIT-C score was 8+:
  - O *Already under care*
  - O *Already has referral*
  - O *No significant impairment*
  - O *Other reason (explain):* _____

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Deployer's SSN (Last 4 digits): _____

9. **PTSD screening as reported in deployer question 13.**

a. Did deployer mark yes on two or more of questions 13a. through 13d.?

O Yes
O No (go to block 10)
O Not answered by deployer

b. If yes, deployer's responses to questions 13e. through 13u. resulted in a PCL-C score of _____ and the deployer's response to level of impairment with life events (13v.) is indicated in the table below.

O 13e. through 13v. were not answered or are incomplete.

Based on the PCL-C score, the deployer's level of functioning, and your exploration of responses, follow the guidance below:

Post-Traumatic Stress Disorder Intervention Matrix				
Self-Reported Level of Functioning	**PCL-C Score <30** (Sub-threshold or no Symptoms)	**PCL-C Score 30-39** (Mild Symptoms)	**PCL-C Score 40-49** (Moderate Symptoms)	**PCL-C Score ≥ 50** (Severe Symptoms)
O **Not Difficult at All or Somewhat Difficult**	No intervention	Provide PTSD education*		Consider referral for further evaluation AND provide PTSD education*
O **Very Difficult to Extremely Difficult**	Assess need for further evaluation AND provide PTSD education*	Consider referral for further evaluation AND provide PTSD education*		Refer for further evaluation AND provide PTSD education*

* PTSD Education = Reassurance/supportive counseling, provide literature on PTSD, encourage self-management activities, and counsel deployer to seek help for worsening symptoms.

c. Referral indicated?

O Yes (complete blocks 16 and 17)
O No
- O *Already under care*
- O *Already has referral*
- O *No significant impairment*
- O *Other reason (explain):* _____

10. **Depression screening as reported in deployer question 14.**

a. Did Deployer mark "More than half the days" or "Nearly every day" on question 14a. or 14b.?

O Yes
O No (go to block 11)
O Not answered by deployer

b. If yes, deployer's responses to questions 14c. - 14h. resulted in a total PHQ-8 score of _____ and the deployer's response to level of impairment with life events (14i.) is indicated in the table below.

O 14c. through 14i. were not answered or incomplete.

Based on the PHQ-8 score, deployer's level of functioning, and exploration of responses, follow the guidance below:

Depression Intervention Matrix					
Self-Reported Level of Functioning	**PHQ-8 Score 1-4** (No Symptoms)	**PHQ-8 Score 5-9** (Sub-Threshold Symptoms)	**PHQ-8 Score 10-14** (Mild Symptoms)	**PHQ-8 Score 15-18** (Moderate Symptoms)	**PHQ-8 Score 19-24** (Severe Symptoms)
O **Not Difficult at All or Somewhat Difficult**	No intervention	Depression education*		Consider referral for further evaluation AND provide depression education*	Consider referral for further evaluation AND provide depression education*
O **Very Difficult to Extremely Difficult**	Assess need for further evaluation AND provide depression education*		Consider referral for further evaluation AND provide depression education*	Consider referral for further evaluation AND provide depression education*	Refer for further evaluation AND provide depression education*

* Depression Education = Reassurance/supportive counseling, provide literature on depression, encourage self-management activities, and counsel deployer to seek help for worsening symptoms.

c. Referral indicated?

O Yes (complete blocks 16 and 17)
O No
- O *Already under care*
- O *Already has referral*
- O *No significant impairment*
- O *Other reason (explain):* _____

This form must be completed electronically. Handwritten forms will not be accepted.

Deployer's SSN (Last 4 digits): _____

11. Environmental and exposure concern/assessment as reported in deployer question 15.

a. Did deployer indicate a worry or possible exposure? O Yes O No (go to block 12)

If yes, mark deployer's exposure concern(s)	
O Animal bites	O Paints
O Animal bodies (dead)	O Pesticides
O Chlorine gas	O Radar/Microwaves
O Depleted uranium	O Sand/dust
O Excessive vibration	O Smoke from burning trash or feces
O Fog oils (smoke screen)	O Smoke from oil fire
O Garbage	O Solvents
O Human blood, body fluids, body parts, or dead bodies	O Tent heater smoke
O Industrial pollution	O Vehicle or truck exhaust fumes
O Insect bites	O Chemical, biological, radiological warfare agent
O Ionizing radiation	O Other exposures to toxic chemicals or materials, such as ammonia, nitric acid, etc. Please list:
O JP8 or other fuels	
O Lasers	
O Loud noises	

b. If yes, referral indicated?
O Yes (complete blocks 16 and 17)
O No (provide risk education)
O *Already under care*
O *Already has referral*
O *No significant impairment*
O *Other reason (explain):* _____

12. Animal bite (rabies risk) as reported on deployer question 16.

a. Did deployer mark "yes" on animal bite/scratch?
O Yes
O No *(go to block 13)*

b. If yes, based on details of event and care received is a referral and/or follow-up indicated?
Note: Rabies incubation period can be months to years. Rabies prophylaxis can begin at anytime.
O Yes (complete blocks 16 and 17)
O No (provide risk education)
O *Was appropriately treated*
O *Already under care*
O *Already has referral*
O *Situation was not at risk for rabies*
O *Other reason (explain):* _____

13. Suicide risk evaluation.

a. **Ask** "Over the **PAST MONTH**, have you been bothered by thoughts that you would be better off dead or of hurting yourself in some way?"
O Yes
O No (go to block 14)

b. If 13.a. was yes, **ask:** "How often have you been bothered by these thoughts?"
O Few or several days
O More than half of the time
O Nearly every day

c. If 13.a. was yes, **ask:** "Have you had thoughts of actually hurting yourself?"
O Yes **(If yes, ask questions 13d. through 13g.)**
O No (If no thoughts of self-harm, go to block 14)

d. **Ask** "Have you thought about how you might actually hurt yourself?"
O Yes How? _____
O No

e. **Ask** "There's a big difference between having a thought and acting on a thought. How likely do you think it is that you will act on these thoughts about hurting yourself or ending your life over the next month?"
O Not at all likely
O Somewhat likely
O Very likely

f. **Ask** "Is there anything that would prevent or keep you from harming yourself?"
O Yes What? _____
O No

g. **Ask** "Have you ever attempted to harm yourself in the past?"
O Yes How? _____
O No

h. **Conduct further risk assessment** (e.g., interpersonal conflicts, social isolation, alcohol/substance abuse, hopelessness, severe agitation/anxiety, diagnosis of depression or other psychiatric disorder, recent loss, financial stress, legal disciplinary problems, or serious physical illness).
Comments: _____
_____

I. Does deployer pose a current risk for harm to self?
O Yes (complete blocks 16 and 17)
O No

This form must be completed electronically. Handwritten forms will not be accepted.

Deployer's SSN (Last 4 digits): _____

14. Violence/harm risk evaluation.

a. **Ask,** "Over the past month have you had thoughts or concerns that you might hurt or lose control with someone?" O Yes O No *(go to block 15)*

If yes, **ask** additional questions to determine extent of problem (target, plan, intent, past history) Comments: _____

b. Does member pose a current risk to others? O Yes (complete blocks 16 and 17) O No (briefly state reason): _____

15. Deployer issues with this assessment (mark as appropriate):
O Deployer declined to complete form
O Deployer declined to complete interview/assessment

Assessment and Referral: After review of deployer's responses and interview with the deployer, the assessment and need for further evaluation is indicated in blocks 16 through 19.

16. Summary of provider's identified concerns needing referral <Mark all that apply>	Yes	No
a. None Identified O		
b. Physical health	O	O
c. Dental health	O	O
d. Mental health symptoms	O	O
e. Alcohol use	O	O
f. PTSD symptoms	O	O
g. Depression symptoms	O	O
h. Environment/work exposure	O	O
i. Risk of self-harm	O	O
j. Risk of violence	O	O
k. Other, list:	O	O

17. Recommended referral(s) <Mark all that apply even if deployer does not desire>	Within 24 hours	Within 7 days	Within 30 days
a. Primary Care, Family Practice, Internal Medicine	O	O	O
b. Behavioral Health in Primary Care	O	O	O
c. Mental Health Specialty Care	O	O	O
d. Dental	O	O	O
e. Other specialty care:	O	O	O
Audiology	O	O	O
Dermatology	O	O	O
OB/GYN	O	O	O
Physical Therapy	O	O	O
TBI/Rehab Med	O	O	O
Podiatry	O	O	O
Other, list	O	O	O
f. Case Manager/Care Manage	O	O	O
g. Substance Abuse Program	O	O	O
h. Other, list:	O	O	O

18. Comments:
_____
_____
_____

19. Address requests as reported on deployer questions 17 through 20.

Deployer question	Not answered	Yes response	Comments (if indicated)
Request medical appointment	O	O	
Request info on stress/emotional/alcohol	O	O	
Family/relationship concern assistance	O	O	
Chaplain/counselor visit request	O	O	

This form must be completed electronically. Handwritten forms will not be accepted.

Deployer's SSN (Last 4 digits): _____

20. Supplemental services recommended / information provided	
O Appointment Assistance	O Family Support
O Contract Support: _____	O Military One Source
O Community Service: _____	O TRICARE Provider
O Chaplain	O VA Medical Center or Community Clinic
O Health Education and Information	O Vet Center
O Health Care Benefits and Resources Information	O Other, list:
O In Transition	

Provider's Name: _____ Date (*dd/mmm/yyyy*) _____

Title: O MD or DO O PA O Nurse Practitioner O Adv Practice Nurse O IDMT O IDC O IDHS

I certify this assessment process has been completed. **This visit is coded by V70.5 _ F**

REFERENCE LIST

Alvarez, Lizette. 2009. Women at arms: Wartime soldier, conflicted mom. *New York Times*, September 26, 2009. http://www.nytimes.com/2009/09/27/us/27mothers.html?pagewanted=all&_r=0# (accessed May 14, 2014).

Armed Forces Health Surveillance Center. 2012. Health of women after wartime deployments: Correlates of risk for selected medical conditions among females after initial and repeat deployments to Afghanistan and Iraq, Active Component, US Armed Forces. *Medical Surveillance Monthly Report* 19, no. 7 (July): 1-10. http://carl.summon.serialssolutions.com/2.0.0/link/0/eLvHCXMwY2BQMLVIskg2SklJNgQ2lw1SzdKS04xTLFMskgzNEk1TUkBjkG7hFgHe5mFuJoFIpbmbEANTap4og4yba4izh24KMOTigekc2EWPd3RxBLY7QM0TMQYWYL84FQDosxjB (accessed May 14, 2014).

Batuman, Fatma, Bevanne Bean-Mayberry, Caroline L. Goldzweig, Christine Huang, Isomi M. Miake-Lye, Donna L. Washington, Elizabeth M. Yano, Laurie C. Zephyrin, and Paul G. Shekelle. 2011. VA-ESP Project # 05-226, *Health effects of military service on women veterans*. Washington, DC: Department of Veterans Affairs, May 2011. http://www.ncbi.nlm.nih.gov/books/NBK56370/pdf/TOC.pdf (accessed May 14, 2014).

Bean-Mayberry, Bevanne, Fatma Batuman Christine Huang, Caroline L. Goldzweig, Donna L. Washington, Elizabeth M. Yano, Isomi M. Miake-Lye, and Paul G. Shekelle. 2010. VA-ESP Project # 05-226, *Systematic review of women veterans health research 2004–2008.* Washington, DC: Department of Veterans Affairs, October 2010. http://www.hsrd.research.va.gov/publications/esp/womens-health.pdf (accessed May 14, 2014).

Carlson, Bonnie E., Layne K. Stromwall, and Cynthia A. Lietz. 2013. Mental health issues in recently returning women veterans: Implications for practice. *National Association of Social Workers* 58, no. 2: 105-114. http://go.galegroup.com.lumen.cgsccarl.com/ps/retrieve.do?retrieveFormat=PDF_FROM_CALLISTO&accesslevel=FULLTEXT&inPS=true&prodId=AONE&userGroupName=97mwrlib&tabID=&workId=PI-0397-2013-APR00-IDSI-5.JPG%7CPI-0397-2013-APR00-IDSI-6.JPG%7CPI-0397-2013-APR00-IDSI-7.JPG%7CPI-0397-2013-APR00-IDSI-8.JPG%7CPI-0397-2013-APR00-IDSI-9.JPG%7CPI-0397-2013-APR00-IDSI-10.JPG%7CPI-0397-2013-APR00-IDSI-11.JPG%7CPI-0397-2013-APR00-IDSI-12.JPG%7CPI-0397-2013-APR00-IDSI-13.JPG%7CPI-0397-2013-APR00-IDSI-14.JPG&docId=GALE%7CA330802292&callistoContentSet=PER&isAcrobatAvailable=true (accessed May 14, 2014).

Carter-Visscher, Robin, Melissa A. Polusny, Maureen Murdoch, Paul Thuras, Christopher R. Erbes, and Shannon M. Kehle. 2010. Predeployment gender differences in stressors and mental health among U.S. National Guard Troops

poised for Operation Iraqi Freedom deployment. *Journal of Traumatic Stress* 23, no. 1 (February): 78-85. http://fw8pk7vf4q.search.serialssolutions.com/?ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF-8&rfr_id=info:sid/summon.serialssolutions.com&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=article&rft.atitle=Predeployment+gender+differences+in+stressors+and+mental+health+among+U.S.+National+Guard+troops+poised+for+Operation+Iraqi+Freedom+deployment&rft.jtitle=Journal+of+Traumatic+Stress&rft.au=Carter-Visscher%2C+Robin&rft.au=Polusny%2C+Melissa+A&rft.au=Murdoch%2C+Maureen&rft.au=Thuras%2C+Paul&rft.date=2010&rft.issn=0894-9867&rft.eissn=1573-6598&rft.epage=n%2Fa&rft_id=info:doi/10.1002%2Fjts.20481&rft.externalDBID=n%2Fa&rft.externalDocID=10_1002_jts_20481&paramdict=en-US (accessed May 14, 2014).

Cave, Damien. 2009. Women at arms: A combat role, and anguish, too. *New York Times*, November 1, 2009. http://www.nytimes.com/2009/11/01/us/01trauma.html?pagewanted=all&_r=0 (accessed May 14, 2014).

Centers for Disease Control and Prevention. 2012. Musculoskeletal disorders. Last updated December 18, 2012. http://www.cdc.gov/niosh/programs/msd/ (accessed May 14, 2014).

Committee on Health Care for Underserved Women. 2012. Health care for women in the military and women veterans. *The American College of Obstetricians and Gynecologists* 547 (December): 1-5. http://www.acog.org/~/media/Committee%20Opinions/Committee%20on%20Health%20Care%20for%20Underserved%20Women/co547.pdf?dmc=1&ts=20140519T1556233721 (accessed May 14, 2014).

Crawford, John. 2014. What science says about gender and PTSD. *Army Magazine*. April 15, 2014. http://armymagazine.org/2014/04/15/what-science-says-about-gender-and-ptsd/ (accessed May 14, 2014).

Crompvoets, Samantha. 2011. The health and wellbeing of female veterans: A review of literature. *Journal of Military and Veterans' Health*, 19, no. 2 (April 2011): 25-31. http://jmvh.org/article/the-health-and-wellbeing-of-female-veterans-a-review-of-the-literature/ (accessed May 14, 2014).

Defense Advisory Committee on Women in the Services (DACOWITS). 2007. *2007 Report.* Washington, DC: Government Printing Office. http://dacowits.defense.gov/Portals/48/Documents/Reports/2007/Annual%20Report/dacowits2007report.pdf (accessed May 14, 2014).

———. 2010. *2010 Report.* Washington, DC: Government Printing Office. http://dacowits.defense.gov/Portals/48/Documents/Reports/2010/Annual%20Report/dacowits2010report.pdf (accessed May 14, 2014).

Department of Defense. 2009. *Report to the White House Council on women and girls*. Washington, DC: Government Printing Office. http://www.defense.gov/pubs/pdfs/DoD_WHC_on_Women_and_Girls_Report_personal_info_redacted_C82A.pdf (accessed May 14, 2014).

———. 2013. *Department of Defense Memorandum: Elimination of the 1994 direct ground combat definition and assignment rule*. Washington, DC: Government Printing Office. http://www.defense.gov/news/wisrjointmemo.pdf (May 14, 2014).

Department of Defense Deployment Health Clinic Center (DoD DHCC). 2014. Post-deployment health reassessment (PDHRA) program (DD Form 2900). http://www.pdhealth.mil/dcs/pdhra.asp (accessed May 14, 2014).

Department of the Army. 2013. Army Directive 2013-07, *Comprehensive soldier and family fitness*. Washington, DC: Government Printing Office. http://csf2.army.mil/supportdocs/CompSoldierFamFit_ArmyDir2013-07.pdf (accessed May 14, 2014).

Department of Veterans Affairs. 2014. About Veterans Affairs. http://www.va.gov/about_va/vahistory.asp (accessed May 14, 2014).

Eisen, Susan.V., Mark R. Schultz, Dawne S. Vogt, Mark E. Glickman, A. Rani Elwy, Mari-Lynn Drainoni, Princess E. Osei-Bonsu, and James Martin. 2012. Mental and physical health status and alcohol and drug use following return from deployment to Iraq and Afghanistan. *American Journal of Public Health* 102, no. S1: S66-S73. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3496463/pdf/AJPH.2011.300609.pdf (accessed May 14, 2014).

Fischer, Hannah. 2014. *A guide to US military casualty statistics: Operation New Dawn, Operation Iraqi Freedom, and Operation Enduring Freedom*. Congressional Research Service. http://www.fas.org/sgp/crs/natsec/RS22452.pdf (accessed May 14, 2014).

Fitzpatrick, Laura. 2010. How we're failing our female veterans. *Time Magazine*, June 30, 2010. http://content.time.com/time/magazine/article/0,9171,2001011-3,00.html (accessed May 14, 2010).

Forman-Hoffman, Valerie L., Michelle Mengeling, Brenda M. Booth, James Torner, and Anne G. Sadler. 2012. Eating disorders, post-traumatic stress, and sexual trauma in women veterans. *Military Medicine* 177, no. 10 (October): 1161-1168. http://media.proquest.com.lumen.cgsccarl.com/media/pq/classic/doc/2867638371/fmt/pi/rep/NONE?hl=&cit%3Aauth=Forman-Hoffman%2C+Valerie+L%2C+PhD%3BMengeling%2C+Michelle%2C+PhD%3BBooth%2C+Brenda+M%2C+PhD%3BTorner%2C+James%2C+PhD%3BSadler%2C+Anne+G%2C+PhD&cit%3Atitle=Eating+Disorders%2C+Post-Traumatic+Stress%2C+and+Sexual+Trauma+in+Women+Veterans&cit%3Apub=Military+Medicine&

cit%3Avol=177&cit%3Aiss=10&cit%3Apg=1161&cit%3Adate=Oct+2012&ic=true&cit%3Aprod=ProQuest+Nursing+%26+Allied+Health+Source&_a=ChgyMDE0MDUyMDAwNTAyNzE1Nzo1MzIyNDESBTgzMjE2GgpPTkVfU0VBUkNIIg4xMzIuMTc0LjI1NS43NSoENzU2MTIKMTI3MDMwNjQwOToNRG9jdW1lbnRJbWFnZUIBMFIGT25saW5lWgJGVGIDUEZUagoyMDEyLzEwLzAxcgoyMDEyLzEwLzMxegCCASlQLTEwMDcxMDctNDY2MTQtQ1VTVE9NRVItMTAwMDAwMjAtMTEzMTgwNJIBBk9ubGluZcoBR01vemlsbGEvNS4wIChjb21wYXRpYmxlOyBNU0lFIDEwLjA7IFdpbmRvd3MgTlQgNi4yOyBXT1c2NDsgVHJpZGVudC82LjAp0gESU2Nob2xhcmx5IEpvdXJuYWxzmgIHUHJlUGFpZKoCKE9TOkVNUy1QZGZEb2NWaWV3QmFzZS1nZXRNZWRpYVVybEZvckl0ZW2yAgC6AgDKAiNHZW5lcmFsIEluZm9ybWF0aW9ufEZlYXR1cmV8QXJ0aWNsZdICAVniAgFO6gIA8gIA&_s=6rRtkgQpBu7BmxLgjgInBNouHKo%3D#statusbar=1&zoom=110 (accessed May 14, 2014).

Gaylord, Katherine M. The psychosocial effects of combat: The frequently unseen injury. *Critical Care Nursing Clinics Of North America* 18 (2006): 349- 357. doi:10.1016/j.ccell.2006.05.010

Gutierrez, Peter M., Lisa A. Brenner, Jeffrey A. Rings, Maria D. Devore, Patricia J. Kelly, Pamela J. Staves, Caroline M. Kelly, and Mark S. Kaplan. A qualitative description of female veterans' deployment-related experiences and potential suicide risk factors. *Journal of Clinical Psychology* 69, no. 9 (2013): 923-935. http://fw8pk7vf4q.search.serialssolutions.com/?ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF-8&rfr_id=info:sid/summon.serialssolutions.com&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=article&rft.atitle=A+Qualitative+Description+of+Female+Veterans%E2%80%99+Deployment-Related+Experiences+and+Potential+Suicide+Risk+Factors&rft.jtitle=Journal+of+Clinical+Psychology&rft.au=Gutierrez%2C+Peter+M&rft.au=Brenner%2C+Lisa+A&rft.au=Rings%2C+Jeffrey+A&rft.au=Devore%2C+Maria+D&rft.date=2013-06-01&rft.eissn=1097-4679&rft.epage=n%2Fa&rft_id=info:doi/10.1002%2Fjclp.21997&rft.externalDBID=n%2Fa&rft.externalDocID=10_1002_jclp_21997&paramdict=en-US (accessed May 14, 2014).

Haskell, Sally G., Kirsha S. Gordon, Kristin Mattocks, Mona Duggal, Joseph Erdos, Army Justice, and Cynthia A. Brandt. 2010. Gender differences in rates of depression, PTSD, pain, obesity, and military sexual trauma among Connecticut war veterans of Iraq and Afghanistan. *Journal of Women's Health* 19, no. 2 (2010): 267-271. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3052274/pdf/jwh.2008.1262.pdf (accessed May 14, 2014).

Haskell, Sally G., Kristin Mattocks, Joseph L. Goulet, Erin E. Krebs, Melissa Skanderson, Douglas Leslie, Amy C. Justice, Elizabeth M. Yano, and Cynthia Brandt. 2011. The burden of illness in the first year home: Do male and female VA users differ in health conditions and healthcare utilization. *Women's Health Issues* 21, no. 1: 2192-97. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3138124/pdf/nihms306394.pdf (accessed May 14, 2014).

Hoge, Charles W., Carl A. Castro, Stephen C. Messer, Dennis McGurk, Dave I. Cotting, and Robert L. Koffman. 2004. Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *The New England Journal of Medicine* 351, no. 1 (July 1): 13-22. http://www.nejm.org/doi/pdf/10.1056/NEJMoa040603 (accessed May 14, 2014).

Hoge, Charles W., Jennifer L. Auchterlonie, and Charles S. Milliken. 2006. Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq and Afghanistan. *The Journal of American Medical Association* 295, no. 9 (March 1): 1023-1032. http://jama.jama network.com//article.aspx?articleid=202463 (accessed May 14, 2014).

Hoge, Charles W., Julie C. Clark, and Carl A. Castro. 2007. Commentary: Women in combat and the risk of post-traumatic stress disorder and depression. *International Journal of Epidemiology* 36 (January 25): 327-329. http://ije.oxford journals.org/content/36/2/327.full.pdf+html (accessed May 14, 2014).

Jacobson, Isabel G., Margaret A. K. Ryan, Tomoko I. Hooper, Tyler C. Smith, Paul J. Amoroso, Edward J. Boyko, Gary D. Gackstetter, Timothy S. Wells, and Nicole S. Bell. 2008. Alcohol use and alcohol-related problems before and after military combat deployment. *Journal of the American Medical Association* 300, no. 6 (August): 663-675. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC 2680184/pdf/nihms66319.pdf (accessed May 14, 2014).

Jacobson, Isabel G., Tyler C. Smith, Besa Smith, Pamela K. Keel, Paul J. Amoroso, Timothy S. Wells, Gaston P. Bathalon, Edward J. Boyko, and Margaret A. K. Ryan. 2008. Disorderly eating and weight changes after deployment: Longitudinal assessment of a large US military cohort. *American Journal of Epidemiology* 169, no. 4 (October 8): 415-427. http://aje.oxfordjournals.org/content/169/4/415.long (accessed May 14, 2014).

Jesse, Robert L. 2011. Post-deployment injuries: A core responsibility and challenge. *Forum* (May). http://www.hsrd.research.va.gov/publications/internal/forum05_ 11.pdf (accessed May 14, 2014).

Katz, Lori S., Geta Cojucar, Sayeh Beheshti, Erin Nakamura, and Michelle Murray. 2012. Military sexual trauma during deployment to Iraq and Afghanistan: Prevalence, readjustment, and gender differences. *Violence and Victims* 27, no. 4: 487-499. http://search.proquest.com.lumen.cgsccarl.com/docview/1035299802/ fulltextPDF?accountid=28992 (accessed May 14, 2014).

Lindstrom, Krista E., Tyler C. Smith, Timothy S. Wells, Linda A. Wang, Besa Smith, Robert J. Reed, Wendy E. Goldfinger, and Margaret A. K. Ryan. 2004. The mental health of US military women in combat support occupations. Naval Health Research Center. http://www.dtic.mil/dtic/tr/fulltext/u2/a434385.pdf (accessed May 14, 2014).

Luxton, David D., Nancy A. Skopp, and Shira Maguen. 2010. Gender differences in depression and PTSD symptoms following combat exposure. *Depression and Anxiety* 27: 1027-1033. http://fw8pk7vf4q.search.serialssolutions.com/?ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF-8&rfr_id=info:sid/summon.serialssolutions.com&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=article&rft.atitle=Gender+differences+in+depression+and+PTSD+symptoms+following+combat+exposure&rft.jtitle=Depression+and+anxiety&rft.au=Luxton%2C+David+D&rft.au=Skopp%2C+Nancy+A&rft.au=Maguen%2C+Shira&rft.date=2010-11-01&rft.eissn=1520-6394&rft.volume=27&rft.issue=11&rft.spage=1027&rft_id=info:pmid/20721909&rft.externalDocID=20721909&paramdict=en-US (accessed May 14, 2014).

Maguen, Shira, Li Ren, Jeane O. Bosch, Charles R. Marmar, and Karen H. Seal. 2010. Gender differences in mental health diagnoses among Iraq and Afghanistan veterans enrolled in veterans affairs health care. *American Journal of Public Health* 100, no. 12 (December): 2450-2456. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2978175/pdf/2450.pdf (accessed May 14, 2014).

Martinez, Luis, and Amy Bingham. 2011. U.S veterans: By the numbers. *ABC News*, November 11. http://abcnews.go.com/Politics/us-veterans-numbers/story?id=14928136 (accessed May 14, 2014).

Mattocks, Kristin M., Melissa Skanderson, Joseph L. Goulet, Cynthia Brandt, Julie Womack, Erin E. Krebs, Rani Desai, Amy Justice, Elizabeth Yano, and Sally Haskell. 2010. Pregnancy and mental health among women veterans returning from Iraq and Afghanistan. *Journal Of Women's Health* 19, no. 12 (2010): 2159-2166. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3052271/pdf/jwh.2009.1892.pdf (accessed May 14, 2014).

Mattocks, Kristin M., Sally G. Haskell, Erin E. Krebs, Amy C. Justice, Elizabeth M. Yano, and Cynthia Brandt. 2012. Women at war: Understanding how women veterans cope with combat and military sexual trauma. *Social Science & Medicine* 74: 537-545. http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1183&context=publichealthresources (accessed May 14, 2014).

Mayo Clinic. 2011. Spirometry. Last updated July 9. http://www.mayoclinic.org/tests-procedures/spirometry/basics/definition/prc-20012673 (accessed May 14, 2014).

Medline Plus. 2014. Somatization. Last updated May 16. http://www.nlm.nih.gov/medlineplus/ency/article/000955.htm (accessed May 20, 2014).

Middleton, Katherine, and Carlton D. Craig. 2012. A systematic literature review of PTSD among veterans from 1990 to 2010. *Social Work in Mental Health* 10, no. 3: 233-252. http://dx.doi.org/10.1080/15332985.2011.639929 (accessed May 14, 2014).

Munsey, Christopher. 2009. Women and war: Researchers find a link between sexual trauma and post- deployment PTSD, but signs of resilience, too. *American Psychological Association* 40, no. 8 (September): 32. http://www.apa.org/monitor/2009/09/women-war.aspx (accessed May 14, 2014).

Murdoch, Maureen, Arlene Bradley, Susan H. Mather, Robert E. Klein, Carole L. Turner, and Elizabeth M. Yano. 2006. Women and war: What physicians should know. *Journal of General Internal Medicine* 21, no. S3: S5-S10. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1513175/pdf/jgi021-S5.pdf (accessed May 14, 2014).

Myers, Steven L. 2009. Women at arms: Living and fighting alongside men, and fitting in. *New York Times*, August 16. http://www.nytimes.com/2009/08/17/us/17women.html?pagewanted=all&_r=0 (accessed May 14, 2014).

National Center for Veterans Analysis and Statistics. 2011. *America's women veterans: Military service history and VA benefit utilization statistics*. Washington, DC: Government Printing Office. http://www.va.gov/vetdata/docs/specialreports/final_womens_report_3_2_12_v_7.pdf (accessed May 14, 2014).

Nayback-Beebe, A. M. 2010. Post-deployment social support and social conflict in female military veterans. PhD diss., University of Texas at Austin, 2010. http://repositories.lib.utexas.edu/handle/2152/ETD-UT-2010-08-1585 (accessed May 14, 2014).

Office of the Chief of Public Affairs Press Release.2012. Army releases generating health and discipline in the force ahead of strategic reset report. U.S. Army, January 19. http://www.army.mil/article/72086/ (accessed May 14, 2014).

Office on Women's Health (OWH). 2010. Mental health: Women veterans and mental health. U.S. Department of Health and Human Services. Last updated March 29. http://womenshealth.gov/mental-health/veterans/#PTSD (accessed May 14, 2014).

Schnurr, Paula P., and Carole A. Lunney. 2011. Work-related quality of life and posttraumatic stress disorder symptoms among female veterans. *Women's Health Issues* 21, no. 4S: S169-S175. http://search.proquest.com.lumen.cgsccarl.com/docview/1444013169/fulltextPDF?accountid=28992 (accessed May 14, 2014).

Society for Women's Health Research (SWHR). 2009. PTSD in women returning from combat: Future directions in research and service delivery. *Journal of Women's Health* (January). http://www.womenshealthresearch.org/site/DocServer/PTSD_in_Women_Returning_From_Combat--reduced_file_size.pdf (accessed May 14, 2014).

Stecker, Tracy, John C. Fortney, Francis Hamilton, and Icek Ajzen. 2007. An assessment of beliefs about mental health care among veterans who served in Iraq.

Psychiatric Services 58, no. 10 (October): 1358-1361. http://ps.psychiatryonline.org/data/Journals/PSS/3819/07ps1358.pdf (accessed May 14, 2014).

Street, Amy E., Dawne S. Vogt, and Lissa Dutra. 2009. A new generation of women veterans: Stressors faced by women deployed to Iraq and Afghanistan. *Clinical Psychology Review* 29: 685-694. http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=2&cad=rja&uact=8&ved=0CDUQFjAB&url=http%3A%2F%2Fwww.researchgate.net%2Fpublication%2F26823842_A_new_generation_of_women_veterans_stressors_faced_by_women_deployed_to_Iraq_and_Afghanistan%2Ffile%2F32bfe50f836b6de606.pdf&ei=bVl7U83DFIqQqAb5zYFA&usg=AFQjCNFYmGB07xohB7uV0Ql80kAVsUSVyA&sig2=sacwEPrHv4wLKHUodgHbsA (accessed May 14, 2014).

Street, Amy E. and Dawne S. Vogt. 2011. Women at war: Gender differences in war-zone stressors and post-deployment mental health among U.S. OEF/OIF veterans. National Center for PTSD. Last updated March 28. http://www.hsrd.research.va.gov/for_researchers/cyber_seminars/ archives/ Sowh-111011.pdf (accessed May 14, 2014).

Street, Amy E., Jaime L. Gradus, Hannan L. Giasson, Dawne S. Vogt, and Patricia A. Resick. 2013. Gender difference among veterans deployed in support of the wars in Afghanistan and Iraq. *Journal of General Internal Medicine* 28, no. S2: S556-S562. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3695273/pdf/11606_2013_Article_2333.pdf (accessed May 14, 2014).

Szema, Anthony M., Walid Salihi, Khalil Savary, and John J. Chen. 2011. Respiratory symptoms necessitating spirometry among soldiers with Iraq/Afghanistan war lung injury. *Journal of Occupational & Environmental Medicine* 53, no. 9 (September): 961-965. http://pdfs.journals.lww.com/joem/2011/09000/Respiratory_Symptoms_Necessitating_Spirometry.4.pdf?token=method|ExpireAbsolute;source|Journals;ttl|1400594143574;payload|mY8D3u1TCCsNvP5E421JYPPlNl9ZUXrQDsjmMHeXqBgfxP56d5BAis+WhfSrPR1S6lcHrAT5WTvTkrI7Jc1zUq2UlEn8N1x7qr2heZXbSZE2/LnQkUnbAwLtuHlqxiruZhFwwtFf4aeU4rMgwns+8TDbNbAkOUlffcIt0OqswFvWf97qU1+XR+GRM7R1S2drJjlMZyk5umnCyX0ZsO+WQO3OqrC6kWZHGFmwsUyPoy3TkarWdvvy6Y+Y2j71uz08ZT48Kq4FnoD9k2sZ/f2+VtLuq7uoIKDiRliJeppVX+rw4UyT+wiUZhSlAJO7dAyjR9vmyVAWVtaC6WwAPrLYreszSV1KWThE7hh6oMJQ6lmjEbXKC+gaal/PsKlfuCcwBrUqJIORKZEJNXxZBdgr3PQsdpBR5D41VaEH2MOCVFQOReXo4fsg/YHzlI735ThKGKWml7j5Rn+50uie6sSdJqjf0QLWOa0q+IPzv3lP9DbtjtVBzj37I05+xyFEQYy8hkPvrHfu33uPvCYtoLj6J9uZawa0r/hG4jNiOlz9FC7GJdeYruj0bK5VQBSvsgdY/dBIMeG3lNTXUCUcvJSluK0aGIw6Dz6nHkcE/3S4anFLYlT+riIYTCGiEX23hvUO;hash|T/Pwan62qFEgc/4BSlD4Vg== (accessed May 14, 2014).

U.S. Bureau of the Census. 2013. Profile America: Facts for features. http://www.census.gov/newsroom/releases/pdf/cb13ff-27_veterans.pdf (accessed May 14, 2014).

Valderas, Jose M., Barbara Starfield, Bonnie Sibbald, Chris Salisbury, and Martin Roland. 2009. Defining comorbidity: Implications for understanding health and health services. *Annals of Family Medicine* 7, no. 4 (July): 357-363. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2713155/pdf/0060357.pdf (accessed May 14, 2014).

Van Dahlen, Barbara. 2012. Psychological wounds take toll on post-9/11 veterans. *Huffington Post*, September 12. http://www.huffingtonpost.com/barbara-van-dahlen-phd/psychological-wounds-take-toll_b_1874405.html (accessed May 14, 2014).

Vogt, Dawne S., Anica P. Pless, Lynda A. King, and Daniel W. King. 2005. Deployment stressors, gender, and mental health outcomes among Gulf War I veterans. *Journal of Traumatic Stress* 18, no. 2 (June 3): 115-127. http://fw8pk7vf4q.search.serialssolutions.com/?ctx_ver=Z39.88-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF-8&rfr_id=info:sid/summon.serialssolutions.com&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=article&rft.atitle=Deployment+stressors%2C+gender%2C+and+mental+health+outcomes+among+Gulf+War+I+veterans&rft.jtitle=Journal+of+Traumatic+Stress&rft.au=Vogt%2C+Dawne+S&rft.au=Pless%2C+Anica+P&rft.au=King%2C+Lynda+A&rft.au=King%2C+Daniel+W&rft.date=2005-04-01&rft.issn=0894-9867&rft.eissn=1573-6598&rft.volume=18&rft.issue=2&rft.spage=115&rft.epage=127&rft_id=info:doi/10.1002%2Fjts.20018&rft.externalDBID=n%2Fa&rft.externalDocID=10_1002_jts_20018&paramdict=en-US (accessed May 14, 2014).

Vogt, Dawne S., Rachel Vaughn, Mark E. Glickman, Mark Schulz, Mari-Lynn Drainoni, Rani Elwy, and Susan Eisen. 2011. Gender differences in combat-related stressors and their association with post-deployment mental health in a nationally representative sample of US OEF/OIF veterans. *Journal of Abnormal Psychology* 120, no. 4: 797-806. http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&cad=rja&uact=8&ved=0CCkQFjAA&url=http%3A%2F%2Fwww.apa.org%2Fpubs%2Fjournals%2Freleases%2Fabn-120-4-797.pdf&ei=L2J7U7GVEM2OqAbFt4DQCg&usg=AFQjCNEekWuEo5d-ZNyqRi-7bD22nQF19A&sig2=j_UpSvQXYExUNKWFRFNC6w (accessed May 14, 2014).

Wells, Timothy S., Cynthia A. LeardMann, Sarah O. Fortuna, Besa Smith, Tyler C. Smith, Margaret A. K. Ryan, Edward J. Boyko, and Dan Blazer. 2010. A prospective study of depression following combat deployment in support of the wars in Iraq and Afghanistan. *American Journal of Public Health* 100, no. 1 (January): 90-99. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2791239/pdf/90.pdf (accessed May 14, 2014).

Wojcik, Barbara E., Fatema Z. Akhtar, and L. Harrison Hassell. 2009. Hospital admissions related to mental disorders in U.S. Army soldiers in Iraq and Afghanistan. *Military Medicine* 174: 1010-1018. http://www.google.com/

url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=2&cad=rja&uact=8&ved=0CDQQFjAB&url=http%3A%2F%2Fwww.dtic.mil%2Fcgi-bin%2FGetTRDoc%3FAD%3DADA511250&ei=0mR7U4ySJNKIqgadpICICA&usg=AFQjCNEdW8mSHeRL4_FehmNJs6s5KDnSlg&sig2=2zEasDDVHBkZcyF75muX1w (accessed May 14, 2014).

Woodhead, C., S. Wessely, N. Jones, N. T. Fear, and S. L. Hatch. 2012. Impact of exposure to combat during deployment to Iraq and Afghanistan on mental health by gender. *Psychological Medicine* 42: 1985-1996. https://www.kcl.ac.uk/kcmhr/publications/assetfiles/iraqafghan/Woodhead2012-combatexposuregender.pdf (accessed May 14, 2014).